

*Carpenter (Ward) & Son.*

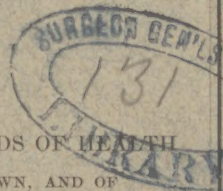
REPORT  
OF  
Messrs. WARD CARPENTER & SON  
ON  
SUNNYSIDE BROOK AND SHELDON BROOK,  
IN THE VILLAGES OF  
IRVINGTON AND TARRYTOWN.

ALSO,  
LETTERS AND OTHER DOCUMENTS CONNECTED WITH  
THE SANITARY CONDITION OF IRVINGTON  
AND ITS VICINITY,  
AND  
REPORTS OF PROCEEDINGS OF THE BOARDS OF HEALTH  
OF DOBBS' FERRY, IRVINGTON AND TARRYTOWN, AND OF  
OTHER MEETINGS HELD ON THE SUBJECT  
OF SANITARY IMPROVEMENT.

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1878.

This Report is printed for private circulation only, and Mr. Cyrus W. Field will feel much obliged if you will read it carefully and return it to him with such comments as you may think proper to make.







## THE IRVINGTON NEIGHBORS.

### LIST OF MEMBERS.

1.	REV. L. C. H. ADAMS,	IRVINGTON.
2.	JAMES H. BANKER,	"
3.	ASHBEL H. BARNEY,	NEW YORK.
4.	A. L. BARNEY,	"
5.	J. C. BARRON, M. D.	TARRYTOWN.
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13.	HON. WM. E. DODGE,	TARRYTOWN.
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16.	CYRUS W. FIELD,	"
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18.	J. B. FULTON, M. D.,	"
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21.	WM. A. HAINES,	"
22.	WM. M. HALSTED,	"
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25.	DANIEL A. LINDLEY,	IRVINGTON.
26.	GROSVENOR P. LOWREY,	TARRYTOWN.
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28.	FRANCIS O. MATTHIESSEN,	"
29.	DOUGLAS MERRITT,	"
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32.	C. PRINCE, M. D.,	"
33.	A. C. RICHARDS,	"
34.	D. NOBLE ROWAN,	"
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38.	FREDERICK J. STONE,	DOBBS' FERRY.
39.	JOHN T. TERRY,	IRVINGTON.
40.	CHARLES L. TIFFANY,	"
41.	REV. STEPHEN H. TYNG, D. D.,	"
42.	J. E. WILLIAMS, (deceased)	"
43.	DAVID B. WILLIAMSON,	DOBBS' FERRY.
44.	REV. ENOCH C. WINES, D. D.,	IRVINGTON.
45.	ELIPHALET WOOD,	"
46.	HENRY R. WORTHINGTON,	"

### LIST OF OFFICERS.

CYRUS W. FIELD,	PRESIDENT.
HENRY R. WORTHINGTON,	TREASURER.
JOHN A. BRYAN,	SECRETARY.

IRVINGTON-ON-HUDSON, *Sept.* 13, 1878.



EXAMINATION  
— OF —  
SUNNYSIDE BROOK  
AND  
SHELDON BROOK,  
IN THE VILLAGES OF  
IRVINGTON AND TARRYTOWN.

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EXAMINATION OF SUNNYSIDE BROOK.

We followed up this brook as far as the east line of the two villages, and found very few indications of malarious tracts. The two worst spots are perhaps the field on the north side of the brook, owned by Mr Maney, and the field on the opposite side, belonging to Mr. Parish, both being somewhat swampy. For some distance further the course of the stream continues sluggish. At the east end of the Cunningham pond there are evidences of some neglect. The strong current of this stream brings down considerable sediment which lodges here on meeting still water, and, in time, supports a growth of aquatic plants. The north margin of the pond is inclined to be wet, as it is none too high with respect to the water level, while it is much below the highway, the wash from which is retained by the rank growth of weeds. In other respects this pond is in fair order, the water being reasonably pure.

Below this pond the current shoots off more rapidly, the bottom is more pebbly, and the margins are steeper, favorable conditions which, it is worthy of notice, gener-



ally come and go together. On Mr. Parish's homestead are two clean pools that are pleasant to look at, when remembering the filthy holes on the Willsea brook. The causes of the good condition of these pools are that the water is not so largely of swamp origin; that the size of the basins is proportionate to the volume of water entering; that the beds are pebbly and the sides walled and cemented.

Mr. Jaffray's pond west of Broadway and east of the aqueduct is also in good order. The water is clear and colorless, the depth is good, and greater than the transparency at first leads one to believe. The margins, however, for a narrow strip are not high enough above the water by a foot. The brook continues its rapid descent, and in almost unimpeachable condition, as far as where it leaves Mr. Jaffray's land. Just before doing so, however, it receives the influx from a sewer pipe which materially pollutes it. The sewage here received may be conspicuously noticed on Mr. Fargo's side of the road where the more greasy portions have been detained by obstructions in the brook. Indeed there are several such places on Mr. Fargo's land, and also on the Irving property, where the surface of the brook is thus disfigured. The bed of the brook through Mr. Fargo's land is so rough and obstructed, and spread over such a great width, and the course through the Irving property is so level and roundabout, that it is not at all improbable that half of the waste of this household evaporates on the way without ever reaching the destination intended for it. That this is exceedingly dangerous is beyond all question.

On the Irving property, as already intimated, the brook takes a bad detour to the north, coming back to the road again not far west. In the neck thus formed there was formerly a pond which has been judiciously abandoned, but not as judiciously filled up. During freshets the water from the brook makes its way into the depression still existing, and stagnates there in places for weeks

after. This basin should by all means be filled as high as the embankment that formerly separated the pond from the brook.

There is but one more point requiring notice in connection with this brook, and that is the unnecessary width of the waterway across the flat. Nine feet is too much. Even now, within two years of its construction, the bottom is silting up, and on this vegetation is growing. This thing has been thoroughly tested and the verdict is in favor of narrower channels, by a large majority.

#### SHELDON BROOK.

It needs but a slight examination to show that the surroundings are much worse than along the Sunnyside brook. Its origin is in a large swampy tract extending east from Meadow street to the junction of Sheldon road with the White Plains' road. The east line of the village passes across the middle about at its widest place. A very large part of this tract has been converted by drainage from an impenetrable swamp into tillable land. The period of its best condition was about six years ago, under the system of drainage then in effect, carried out, at large expenditure, by the late Henry Sheldon. Since that time, a new system of drainage has been introduced, which has led to the neglect of the large open trenches. It would seem that the tiles recently laid are inadequate, which, together with the neglect, not only of the open trenches, but of the whole tract as well, has of late tended to put back the former garden-plots towards their earlier boggy condition.

The tiles, at their best, being insufficient in times of freshet, and the trenches, which alone could carry off the large amount of rain that falls on the water-shed, of which this tract is the collecting basin, being overgrown and clogged up, it is now not uncommon to see a large part of the surface flooded after every heavy storm. The soil consists very largely of decayed vegetable matter.



Every time this is flooded, and the hot sun pours down on it a few days, there are a dozen persons in the vicinity struck with fever and ague, or relapse into an old complaint.

The number of men, women and children living near this tract that are suffering with the various forms of the ailment is very large, much larger than ever known before, while, at the same time, the attacks are much more virulent. In many cases, stout, healthy children are reduced in a few weeks to mere skeletons; strong men shake like a reed, and the countenances of all attacked are saddening to behold. We have not figured up minutely the exact number of sufferers, by the entry in a note book of each and every case, but from a general review of the whole neighborhood, after careful inquiries, we sum it up, in our judgment, at about fifty. All the residents admit the existence of the disease either in their own or neighbors' families.

It is striking to compare this large number of cases with the small number known to exist in East Irvington along the sources of the Sunnyside brook. Though the latter is much the more populous settlement, we have heard of but four cases there, and one of these arose at Pennybridge, further down the stream we are now examining.

In conversing with the teachers of the school at the corner of Sheldon road and Meadow street, we found that they both were more or less affected by this complaint, brought on, beyond doubt, solely by their near vicinity to the swamp on the east, aided, as they believe and as we believe, by the bad drinking water. From inquiries made in all places visited we have been led to consider this a very important element of mischief. Many of the residents around this tract rely upon springs (?) that are on a level with the old swamp, and in which the water is not, and cannot be, pure.

Besides the agency of such water in bringing on, aiding,



or aggravating the complaint, it is also established in our minds that damp cellars and basements play a very important part. In nearly all cases of ague we found the three agencies combined; exhalations from the putrescent surface of the swamp, impure water, and wet floors. It is also well proved by our examination that noon-day exposure to the miasma is as dangerous as evening damp.

From Meadow street west to the Croton aqueduct, the brook is in good condition and has fair surroundings. On Mr. Clark's land, west of the aqueduct, there is a large pond against which there is the general objection that the water is of swamp origin and therefore dangerous to store in large, shallow open reservoirs. Besides this, the immediate margins on the east are rather low for the level of the water, and the dam on the west is not in good order. There was no natural place for a dam that could be availed of, and, as a consequence, the wing walls were necessarily lengthy and thus a large extent of land on the west was exposed to leakage through the walls and under them. We would recommend that the bottom of the pond be excavated at the middle and east parts, and the material be used in perfecting the inner slope, and in making an outer slope for the wing walls.

Soon after leaving this pond the brook crosses to the south of Sheldon road, entering the little village generally known as Pennybridge. Along its course through this settlement the margins are low and wet, and very poorly drained, or not drained at all. It is hoped that the recent grading of the highway, which is not even yet high enough, will lead the owners here to bring up their lands out of the mire correspondingly. As things now exist, there is no wonder that malaria is very prevalent here. The pond on the north, the dense shade on the south, the swampy nature of the ground, the innumerable dogs and goats, dark wet holes, called cellars, and wells containing nothing but stagnant ground water, all conspire to make this

an unhealthy place. The brook also exercises an important part on account of its great width and slight depth, it being a reservoir of the germs brought down from the swamp, and of the filth here generated. At the point where it leaves Mr. Coyle's land, and enters the Gurnee property, a bad bar has formed, owing to the excessive width, and a large pool is thus produced which backs up on the Coyle lot. Into this pool, spread out over eight or nine feet wide and not three inches deep, is concentrated the drainage of a stable under which it backs up, two bad privies and two hog pens, besides the slops from the yards on the north. After stating that other details like this could be mentioned, the existence of at least forty cases of malaria alone in this settlement will be accepted as a matter of course. And yet all this could be changed within a month. Kill the dogs and goats and fowls that contaminate the greasy ground; separate the privies from the open water course; abolish the pig pens, against which there is an ordinance; fill in the low places: concrete the cellar floors; underdrain every lot; confine the brook to narrower limits; wall it up and cover it up; and the number of new cases of ague, diphtheria, and typhoid fever would be largely reduced; this settlement would then be in as good a sanitary condition as any other part of the village. As to the two main requirements, perfect sewerage and good water supply, we are all at the same disadvantage.

West of Broadway a branch brook comes in from Mr. Terry's three ponds, with wet borders all the way up to Mr. Terry's line. Of late years this strip has also deteriorated, and without doubt has an evil influence on the vicinity. From Mr. Terry's line to the main brook the wet border averages 150 feet wide. The chief source of the difficulty here is, that the bed of the brook, never low enough, has become stopped up by the growth of plants which retard the flow and allow the sediment to settle, a result hastened by the interference of cattle with its banks.



The bed of this brook should be lowered 2 feet and be protected by a pavement and side walls; common 2-inch tile could then be laid laterally so as to drain the whole field effectually.

In this connection and under the circumstances that this entire basin has a malarial tendency, it is proper to call attention to the ponds on Mr. Terry's place, through which this stream runs. The middle pond has a greenish cast which looks suspicious, while the large one at the north end is very turbid, and must largely add to the noxious exhalations from the entire flat. Great pains are undoubtedly taken to keep the surroundings in order, but the fact remains that it receives all the wash from Broadway and from Mr. Gurnee's road, and is altogether too highly charged with foreign matter for storage in a malarious neighborhood. Besides this, the village uses much of the water from the Merritt pond that ought to overflow into this one, thus materially interfering with a good circulation. Moreover, the island in the pond is too low, as are also the margins. While reconnoitering in this vicinity, a very bad cesspool was pointed out on the same lands, west of the house, the overflow from which now scatters over the surface, and the odor of which wafts much further than the owner of the premises is perhaps aware of. It would be far better to deliver the sewage directly to the land, without the intervention of a cesspool that must first get full, and which in the meantime generates gases of a deadly character. We have no hesitation in condemning any and every contrivance that delays such horrible compounds one single hour longer than necessary.

At the point where this south branch strikes the main brook, the latter is very wide and backed up by a dam, some 300 feet further west, at the head of the large pond. In some places this long reach is at least 10 feet wide, so that it is nothing but a pond, the water being raised above the natural bed of the stream as much as 4 or 5 feet, which must and does materially injure the drainage for

the whole length, besides forming a harbor for the impurities brought down from the swamp and from the Penny-bridge settlement. The large pond below this has the same objections against it, and is moreover in very bad condition with respect to its bed, which has become silted up. All the territory west of Broadway can readily be brought to a thoroughly sound condition by the application of the proper principles, three of which we consider to be the clearing away of the two dams, the narrowing of the channel of the brook, and the lowering of its bed. From the pond west the brook passes through a deep ravine, and, as is usual in such cases, the fall is rapid, and the margins are dry.

WARD CARPENTER & SON,  
*Civil Engineers.*

TARRYTOWN, N. Y., }  
Sept. 26, 1878. }

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DOBBS' FERRY, 23d September, 1878.

CYRUS W. FIELD Esq., Irvington :

DEAR SIR :—I return with thanks the copy of Messrs. Carpenters' able report on the condition of the brooks and ponds of this neighborhood, which you were so good as to send me for perusal. You invite comment, and therefore I again venture to address you.

The report, which I have carefully read, and my own observations, convince me that the key to the sanitary situation lies in the condition of these water-courses; and that if they be once put in good working order, and so maintained, great improvement in general health will be speedily apparent. The occasion for wonderment is, not that we have now a visitation of malarial disorders, but the extraordinary immunity we enjoyed so long, notwithstanding utter neglect of all sanitary precautions; strong evidence, it seems to me, of the inherent healthfulness of the locality.



There is one important feature in connection with the Palmer brook which I would like to see brought out with more distinctness than I have yet seen it referred to, so that it may be generally understood and appreciated : it is that this brook is the only outlet for the drainage of a considerable tract of land ; extending, say, from the heights south of the Ashford road, which I think drain into the wet land mentioned in the report, in which one branch of this brook takes its rise ; thence north along the water-shed to your property, and so on down to Abbotsford rise on the main road, and bounded on the west by the aqueduct embankment, forming a basin not much less than a mile in length, by perhaps half or three quarters that distance in width ; the lowest part of this tract is, I believe, lower than the embankment, through which there is no other opening, than the one through which the brook passes, available for its drainage. Now it seems to me desirable to bring out this topographical feature distinctly, to show that it is vitally important to the community at large, and especially to those who live around and within this basin, that the brook which drains it, or should drain it, should at once be put and maintained in thorough working order, so that it may discharge efficiently the function nature designed for it, instead of, as is now the case, permitting it to be obstructed by accumulations of mud, and trampling of cattle, so that the surplus water, instead of being promptly conducted to the Hudson, is forced back into numerous muck holes and swamps, there to stagnate and evaporate in noxious exhalations.

The neglected, choked condition of this brook in its upper course, and the consequent saturated, unwholesome condition of much of the land bordering upon it ; the practice of converting a large piece of meadow land into an ice-pond in winter, and a morass in spring and summer ; and the sink of abominations at the slaughter-house, are not mere matters of private concernment, to be allowed to continue as long as the parsimony of the

owners—some of them absentees—shall dictate, or the supineness of local officials permit. They are to be stigmatized as public nuisances, menacing the dearest interests of every citizen living within reach of their malign influence, and demanding prompt application of remedial measures.

In conclusion, I desire to say, that I feel much indebted to you for your vigorous action in this important question of sanitary reform, and I trust you will not suffer the matter to rest until needful improvements shall have been carried into effect.

Believe me, dear Sir,  
Yours very truly,  
R. R. TYERS.

*From an influential resident of Irvington.*

17th September, 1878.

MY DEAR MR. FIELD:—I thank you for the very full and graphic report of Messrs. Carpenter, the reading of which has both confirmed my own observations and given me much new information. I think it is much to be regretted that a truly enlightened inquiry into the sanitary condition of this most attractive region should be regarded by any of our neighbors as a slander and libel. As I interpret it, your object in these publications is to call attention to a most vital matter: to give much needed information; and to secure co-operation in a simple, common-sense and eminently practicable plan of removing causes of disease and abating nuisances. I wish you all success, and I feel sure that you have already accomplished more than you know.

This movement in Irvington will move other places and people. When farm-houses in New England are becoming dangerous to human life, the suburban towns and villages of a city like New York, may well look to their



sanitary condition. Besides this, the changes of thirty years must be looked at fairly. An old resident says, "Then (1847) I could ride from Dobbs' Ferry to Tarrytown and see the Hudson over *cultivated fields* all the way." Now we have gone back somewhat toward the primitive state of uncultivated and undrained lands, and in addition to this, we have the influences of an increased population--man and beast helping to promote impurity.

But the remedy is *so simple*; the means so ample; the slope of our hills, and the open arms of our great tide-full river, so favorable to cleansing the face and hands and body of our fair village, that instead of complaining, I can but think we shall all rejoice to secure so much for so little, so great a reward of loveliness and healthfulness for so small an outlay, and a little, a very little of the spirit of good neighborhood.

It ought to be considered, I think, an auspicious moment for such an effort at realizing a noble ideal, because there is no speculation in real estate just now, and a "sensitive market" is not likely to be affected by frank statements. Nor can I see that searching out the blemishes can destroy the fair name of our region. Because we say there are *sun-spots*, we do not proclaim that our orb of day is a fraud and snare. Because we find here and there a breeding-place for disease, and point it out, I can not see that we proclaim this region to be a "pest-house," or a "plague-spot." The very contrary!

Believing that this movement will result in great good; that it has already accomplished much; I bid you "God speed."

Very truly,

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*From a former resident of Irvington.*

Sept. 7th, 1878.

MY DEAR MR. FIELD.—In view of the facts you submit, it seems to me that some of your neighbors might

find more profitable occupation in aiding to relieve the neighborhood of malarial influences than in condemning the action of yourself.

Very truly yours, \_\_\_\_\_

From the *Sunnyside Courier*, August 29, 1878.

"IRVINGTON NEIGHBORS."

A meeting of this society—to which the public was invited—was held at the rooms of the Sunnyside Athenæum, on Friday evening, August 16th, 1878. Notwithstanding a heavy rain, it was well attended. Mr. Cyrus W. Field, the President, called the meeting to order, and requested Mr. John A. Bryan, the secretary, to give the history and explain the objects of the organization.

Mr. Bryan, in his address, claimed to be one of the oldest inhabitants. For about fifteen years he had seen much of the growth of this community. It is a rural locality with the habits of a metropolis; very little gossip; too many *blasé*; and a very discouraging field for lecturers, singers, showmen or orators. A circus was never known to pitch its tent there. The speaker proceeded:

When I first came here, the vocabulary of the army in Flanders was not redundant enough for the mud, and could not reinforce expletives enough for the dust; yet our people meekly wallowed through the one and swallowed down the other. Broadway was repaired with the plow and scraper, until some one—I never could find out who—got an act passed to authorize macadamizing, if ten or more tax-payers in a road district called a meeting and voted the money. I secured the ten names in our district, but there was no one at the meeting except the old road-master and myself. We elected ourselves chairman and secretary, and we had great difficulty to complete the organization with two tellers as the law required. We



stopped "the butcher, the baker, and the candlestick maker" as they passed. We voted thousands, elected five commissioners—Messrs. Merrit, Cunningham, Worthington, Coffin and myself—and we built the best road in the State, costing about \$20,000 per mile. This improvement may be said to have been *forced* upon this community. There has been no grumbling and no thanks; no compensation and no stealing.

For several years before and after the macadamizing, I was a self-constituted committee of one to superintend the road sprinkling by voluntary subscriptions. There was little difficulty in raising the money; "they came down with the dust;" but the enterprise was rather a failure for want of water. We built a reservoir for \$1,000, to catch the drip from a spring; but one of our neighbors tapped it to supply his house and stable, and there was no one who felt it his duty to sue or enjoin. I resigned for incompetency.

In those days there was not an incorporated district in this town of Greenburg. Its assessment roll was believed to be heavier than that of any other unincorporated place of equal area in the world. The persons representing nine-tenths, perhaps nineteen-twentieths of the valuation, knew nothing of the assessors or the *modus operandi* of taxation, except to pay.

Large sums were voted by thinly attended meetings called on obscure notices, at some "corners" of Hall or Smith, several miles "over back," which the city business man could not attend without sacrificing a day's time; and he would not know what to do even if he heard of the notice and had gone there. This town was once bonded, at such a meeting, to build boulevards in another town. None of us knew it until Mr. Moses H. Grinnell received an anonymous letter. As he read it, a smile of ineffable sweetness illuminated his countenance, and that ended it, so far as I am at present advised.

After we got our district macadamized, some one at Al-

bany sent me an early copy of an act authorizing the incorporation of a village upon any area a majority of the inhabitants chose. I immediately urged our people to incorporate our road district at once, before Tarrytown took the northern half and Dobbs' Ferry the southern half, more or less. The warning was not heeded, until Tarrytown did as I thought she might; and then we hurried up and forestalled Dobbs' Ferry. The three villages are badly divided for us; whereas, had it not been for our apathy, we might have had one of the neatest and freest village corporations to be found anywhere; with the heavy tax-payers nicely grouped and independent.

The seminaries of learning were—well, no matter; we had better not speak of them, except to say that the traditional abominations of "our country school-house" challenged rivalry. Our annual school district meetings were at first attended by so few, you might call it a close corporation. I slipped in as a trustee, while the bars were down one night; and during the three years of my term, I inaugurated so many heresies and pressed for so many innovations, that there was an awakening and rallying of voters at succeeding elections. It was a novel excitement, and it has been the only local enterprise I ever knew our people to enter into with spirit; unless we except, perhaps, the Sunnyside and Sleepy Hollow Steamboat line, which was a sort of frolic in the flush times, sinking some \$350,000 or so; while they had captains enough to officer the navy. I was one of them; I helped steer.

The school enterprise culminated in the erection of new buildings, at heavy cost; one of them over \$40,000, and all of them free from debt. Mr. John E. Williams was entitled to most of the credit for carrying through that improvement. He was also the chief instrumentality in causing the foundation of our Free Library and the Sunnyside Athenæum; of which latter I am still president by right of reversion. Our failure was followed by a trial transfer to the Young Men's Christian Association,

which has since failed. Neither of these organizations have cared to continue its use. It is awaiting some new development, and the Free Library has long been awaiting an accession of new books.

Pardon any egotism involved in these boastings of failures. It was once the fashion here, and serves to illustrate the force of habit. It is the "pride of humility."

Another fashion has been long established worthy of a passing allusion. It is the reticence observed in respect to burglaries, robberies, incendiary fires, and divers other offences known to the law. I have incidentally heard of many which never crept into newspapers. There have been no systematic means provided for the detection and punishment of desperadoes. Like the "wild fox" alluded to in the school reader:—"They pursued their way unscared."

Mr. Williams was a gentleman of rare ability and strong will; public-spirited and benevolent; and his death, a year ago, was a great loss to this section. Men like him, possessing both the executive ability and the disposition to serve us—in attaining "solidarity" (as Kossuth called it) and concentrating efforts to improve upon these loose methods,—are so seldom found, that when one of this kind takes up his abode here he ought to be gladly welcomed; and if his zeal should happen to outrun his knowledge of the people, his ignorance should be indulgently regarded, in view of those noticeable peculiarities of the inhabitants on which I have been animadverting; which may be summed up into a desire "to be let alone."

The new comer to whom I allude is our neighbor, Mr. Cyrus W. Field, President of the "Irvington Neighbors," a man whose marvelous vital force and dauntless energy, in a world-renowned enterprise, have been sanctified by a success which has made him a commercial hero and given him an imperishable name.

We ought to thrust some office on him; high constable, if we have no better. I doubt not he will accept it and



fill it as creditably as Ex-President Tyler did that of path master; who made his jocose constituents "sweat."

In 1874, after a brief residence here, Mr. Field's habitual vigilance and quick observation discovered that his neighbors were precisely the kind of people who needed to be organized into a voluntary association; ostensibly for social intercourse and good cheer, but really with chief intent to lead them to a right discharge of certain duties, as citizens of a Fourth of July Republic. The first meeting was a "lunch" at his house, followed by the formation of this society; under a constitution which defined the objects to be the promotion of the highway improvements, the fostering of the æsthetical characteristics, the encouragement of the educational departments and the conservation of the health of the neighborhood.

To most persons these would seem to be laudable objects. I think much good has already been accomplished in carrying them out; and no criticisms have been made on what has been done under Mr. Field's leadership, until he gave publicity to the present movement to improve the sanitary condition of the neighborhood.

Mr. Field is entitled to all the credit of publishing the recent pamphlet, and is willing to take the responsibility. For one, I approve his course; also, that of our local organ, the *Sunnyside Courier*; and I know of no one who opposes this publicity, except a few who will suffer least from the depreciation of property, because their places are not for sale. Those who suffer most in this way are with him heartily, including nearly all of those whose places are for sale. If he thinks he is called upon to justify himself, under these circumstances, Mr. Pecksniff would say, if here, "a legible opportunity is now offered."

Mr. Field delivered an animated speech; which he commenced by taking the entire responsibility of publishing the pamphlet. Those gentlemen who objected reminded him of the man who broke his leg and sought to conceal it while limping about on crutches. They would swear

we had no chills here, while their teeth chattered during their utterances.

He was glad to see the newspapers had got hold of it, and that our confession was noticed and commended; not only on account of its novelty, but from the substantial benefits which are to accrue from the agitation. He regretted, however, that the newspapers did not bring out more prominently the fact that this disease is of recent origin here and that it is, even to-day, probably the healthiest spot within the same radius from the City Hall. This was distinctly announced in the pamphlet; and any one who is careless enough to locate in or near the suburbs of New York, on only a superficial examination, deserves to be cheated by one of those vendors who may seek to defame this village while he deceives about the health of his own.

I said, at our first meeting, a month ago, that we would set the fashion of telling the truth about chills and fever; and we have. It is going to take. It has taken already; and those who want to be on the popular side had better fall into line; because it will not be long before we shall be able to announce that the health of the place is fully restored. Then, a reaction will set in; and property will go up to the other extreme. The best people will come where the best efforts are made to remove causes of sickness.

The Deaf and Dumb Asylum, one of the grandest charities in the country, has just purchased a site here. After looking about for several years, they gave us the preference. They did this, after employing Colonel Waring to investigate and report upon the sanitary condition of the property! Look at the splendid residences erected here: would they have been built if the owners had not been assured that the neighborhood was the best to be found near the city? Mark what I predict: instead of this publicity being a damage, it will be an advantage. Common sense dictates it, as well as honesty. There is

no reason why we should not bring the same principles to bear in sanitary matters as we do in business; and, in either case, a different policy would be disastrous.

At Stockbridge, Mass., my native place, real estate has gone up, on account of the demand for healthy places in the country. During the past few years it has increased largely. Then, there is the case of Lenox, mentioned by me at a former meeting: which became unhealthy; and, under the superintendence of Col. Waring, was completely restored. I know a hotel in the White Mountains, which, after a long and successful career, lost its customers, by reason of malarial disorders there prevalent. Col. Waring pointed out the cause, which was removed, and the house has regained its former good reputation, as shown by its present throngs of guests. I could mention several other cases, where places have lost their good reputations and regained them by systematic treatment under sanitary experts; and if Irvington is not restored, I intend to sell out if I can;—failing which, I propose to dedicate my place to an insane asylum; for we shall need one here.

Mr. Field then submitted and commented upon a list of houses which were without occupants and depreciated in value; and he held in his hand a report of Messrs. Ward Carpenter & Son, Civil Engineers, on the Hamilton Pond. He also gave statistical information of localities and extent of cases, and questioned several persons present as to their experiences; which were given.

Mr. Field continued: Now, just look at this condition of things:—Mr. F. A. Lafferty, the principal of our largest public school, tells us that 315 children attended the past year, and at least 100 of them had been afflicted with chills and fever: and that all, some 25 or 30, from that portion of the district called Abbotsford, were so afflicted, without exception; while at the same time, the rooms were large and well ventilated, with every modern improvement. I have been to see Mr. Russell, the druggist, and have a number of letters from residents com-



plaining of various plague spots and nuisances; and I have conversed with mechanics, laboring men and others; and all agree that we need to have vigorous measures taken to eradicate these evils.

We had no fish at my house to-day: because the fish man was so unwell with the chills he couldn't attend to his business. This may seem to be a trivial circumstance; but it is a straw which indicates the course of the wind.

I was accosted the other day by a gentleman at Dobbs' Ferry, who had bought large tracts to cut up and sell for villa sites, and he upbraided me for publishing that pamphlet. I asked him whether he didn't think it was best to tell the truth about the disease? He replied that it was not true and denied that there was any case of chills and fever in Dobbs' Ferry; not one. I told him I did not think he was correctly informed. So, I thought I would find out how much he knew about it: and I employed a reliable person, a lady, to canvass his neighborhood: and, after only a partial investigation, she has returned to me a list of seventy-eight cases occurring there; and these, too, within the past month.

I now propose to have every house investigated in the entire neighborhood, from Dobbs' Ferry to Tarrytown; and let every family speak for itself. I don't propose to publish these. My object has been "agitation" and I think, now, that having, like Col. Benton, "set this ball rolling," we can afford to stop publishing the facts. The ball will roll on of its own momentum. Nobody can stop it. The people are awakened: and we will, soon, as "men and brethren," make our investigations and discuss the best means of curing the evil, in the privacy of the association; in the "bosom of our own family," as it were. I have three meetings appointed for next week; one for the people of Dobbs' Ferry; another for the people of Abbot'sford: and another, right here again, for the people of Irvington: not so much to agitate, but to perfect organizations for concentrated and systematic action.

We want the Board of Health, some of whom are now present, to aid us in this matter: and they have assured me they will. They have, at my request, appointed a meeting for to-morrow night: and it would be a good thing if you came out, in force, to tell them what you think ought to be done.

The speaker—after thanking Mr. Bryan for his co-operation and exonerating him from any participation in publishing the pamphlet, read several commendatory articles from city papers: and concluded, amid applause, by offering a premium of \$100 for certain improvements to places, as stated in another column.

The meeting then adjourned, to assemble again on the call of the Chair.

On the following evening, Saturday, August 17th, the Trustees met as a Board of Health, at the same place: and, after full and free discussion, as to their powers, aided by Mr. Field and Mr. Bryan, they appropriated \$300, being the entire amount in the treasury, for sanitary purposes, the same to be added to the voluntary subscriptions to pay expenses of having surveys and reports made under the direction of Col. Waring, as proposed by Mr. Field; on the coming in of which reports the Board will be again convened.

The people "up on Broadway" were out in very small force, thus showing their characteristic indifference—their desire "to be let alone;"—but those "down in the village" manifested a decided interest in the subject, which will probably compensate for any lack in the other quarter.

We understand that subscriptions to the \$1,500, needed for the preliminary work, are completed, and that the surveys will be begun immediately.

Meetings were held during the past week, as announced by Mr. Field.

The one held at the Athenæum, at Irvington, on last Saturday evening, was very largely attended. Stirring

speeches were made by Messrs. Field, Worthington, Wood, Richards, Guiteau, Bryan and Washburn; the remarks of the gentleman last named being quite noticeable, and eliciting some observations from Mr. Worthington, which the unusual pressure on our columns, this week, compels us to omit. The President was authorized to divide the neighborhood, from Dobbs' Ferry to Tarrytown, into districts, and appoint one or more persons, in each, to investigate and report upon its sanitary condition.

Several gentlemen were elected honorary members, including all the clergymen and physicians of Irvington, together with our Member of Assembly, Hon. Wm. F. Moller: and the meeting adjourned, with an enthusiasm enkindled which leaves no doubt that the movement is not only unmistakably popular, but will bring about the desired results more speedily than its earliest advocates had reason to expect.

The Board of Trustees of Irvington is also the Board of Health. All the members of the Board were present. Mr. Guiteau is President of the Board; and, in the course of his remarks, he said the Board had been waiting until formal complaint should be made before abating any nuisances: whereupon, on the suggestion of Mr. Field, a resolution was passed, with rounds of applause and roars of laughter, complaining of certain places; and, at 7 o'clock last Monday morning, the work of removing them was actually begun. This is practical, and is to be followed up, by one complaint after another, until all are swept away.

On the following Tuesday evening, a meeting of the Board of Trustees of Irvington was held, on request of Mr. Cyrus W. Field, at which plans for sewerage and a supply of water were discussed, and investigations in these directions were initiated.

Owing to the great public interest taken in these matters, our reporter will be on the alert to chronicle any further proceedings.



From the *Sunnyside Courier*, September 12th, 1878.

"THE IRVINGTON NEIGHBORS."

A meeting of the "Irvington Neighbors" was held at the Sunnyside Athenæum, on Friday evening, September 6th, 1878,—Mr. Cyrus W. Field, President of the Association, in the chair, and Mr. John A. Bryan acted as Secretary.

The attendance was large, including the Board of Health of Irvington and delegations from Dobbs' Ferry and Tarrytown.

Mr. Field presented a reprint from the *Boston Medical and Surgical Journal*, of July 18th and 25th, 1878, of an Essay by Col. George E. Waring, Jr., Sanitarian Engineer, Newport, R. I., on "The Causation of Typhoid Fever," which received the prize of \$200 from the Fisk Fund, and which shows the high estimate placed upon the skill and judgment of this experienced expert in sanitary matters, whose services this association proposes to engage in the pending efforts to restore the health of this neighborhood.

Mr. Field also presented and recommended a beautiful volume of 326 pages, entitled "Villages and Village Life, with Hints for their Improvement, by Nathaniel Hillyer Eggleston," just published by Harper & Brothers, some passages from which he read.

Mr. Guteau, President of the Board of Health, informed the meeting that the Board had served written notices on about twenty parties to abate nuisances of cesspools and pig pens, and that other complaints were now pending and would be promptly acted upon. Any parties who neglect to comply with notices will be compelled to do so.

Mr. James Cannon complained of several hog pens, which were referred to the Board of Health.

Mr. Field read several communications he had received from influential persons, in response to letters he had addressed to them. He refrained from giving names. The

following extract from one of them produced quite a sensation :

"It is very much to be regretted that Irvington has been published, far and wide, as the Pest House of the American continent. It is utterly untrue that our locality is any worse than others. On the contrary, I still believe that it is far healthier than the great majority of villages within fifty miles of New York. The sale of property has been effectually knocked on the head for a generation, by the unnecessary and unwise publicity given to the private consultations of the Irvington Neighbors; and twenty years of untiring exertion, and hundreds of thousands of expenditure, will barely suffice to undo the injury which has been done to the property in our vicinity."

Mr. Field exclaimed: "Who supposes this neighborhood to be any more unhealthy than others near New York? We have affirmed, over and over again, that we all consider it the very healthiest; and we defy any one to show the contrary. Still, this don't make us a healthy locality. The writer does not read the papers we send him, or he would not be setting up men of straw to knock over. He, or any others who take a superficial view of this movement, cannot stop the publicity and the complete remedy which is to follow, any more than the fires of Tophet can be quenched by throwing into its portals brimstone, saltpetre, charcoal, petroleum, alcohol and gunpowder, from now until the resurrection morn. [Laughter and applause. A voice: "Who wrote it?"] I shall not give you his name. Probably he would not wish it known. I will file his letter away, and some day I will show it to him. He will then see what a false prophet he has been; and I am sure he will be ashamed of it in less than a year.

Mr. Guiteau inquired whether we had not just as good experts here in our midst as Col. Waring; to which Mr. Field replied: "If you had a watch to repair, would you take it to a blacksmith? We want a man to investigate and advise us, who stands pre-eminent in this department.

It is a distinct business by itself: like the law, or medicine, or hydraulics, or any other special business. Every man to his calling. When you depart from that rule, you go counter to the plainest dictates of common sense. Messrs. Ward Carpenter & Son are following fast in his footsteps: but they have not caught up with him yet. They have been employed by me on this business, incessantly, ever since the movement was begun: and they have further orders enough, of a like character, to keep them busy for some time to come. They are preparing the way for Col. Waring. We expect to employ all the local talent we can command; but I don't think we can complete the work as it ought to be done without going outside. Besides all this, the Association and the Board of Health have both actually voted unanimously to employ Col. Waring, and we have only raised money to pay him. Furthermore, I have gone so far as to arrange for his assistant and men to be here without delay and begin the work. [Applause.] The Board of Health has been aroused to do some part of its duty already, for which we are thankful. Now, we want them to go further. We don't care who helps us, nor by what door we are led to the Elysian Fields, so long as we get there; but there is a choice of routes to the main avenue. Before this ball was set in motion, we were on the broad road which leadeth to destruction. Let us get out of it, and take that narrower and better way which is the only safe one. The best is good enough; and as you have already resolved on the best, why go sprawling around to find men who have not thoroughly established reputations as experts?"

Mr. Guiteau proposed that a board of three local physicians be appointed to investigate and report.

Mr. Field replied that more than three local physicians had already reported, and have approved of the employment of Col. Waring.

Mr. D. O. Bradley, from the Dobbs' Ferry delegation,



made a stirring speech. When he first heard of Mr. Field's doings, he felt aggrieved; but, after a little while, he made up his mind that it was not the publicity, but the *fact*, which was damaging property. He had been latterly investigating, and had found the statements of Mr. Field not at all exaggerated; and yet he believed this to be the healthiest spot within fifty miles of New York. The intrinsic value of land here is no more than interior farms, worth forty dollars per acre for agricultural purposes. The prices here are "fancy," to meet a demand for suburban residences; and the moment wealthy citizens of New York become satisfied these suburbs are not healthy, they will not settle here, and those who have settled here will move away. We want the best talent to reform the evil. We have already actually employed Col. Waring, and this discussion is drifting away on an immaterial issue. I don't think any one thing is the cause of the disease. There are many; among which are the embankment of the Hudson River R. R., the excess of trees and shrubbery, the bad condition of privies and cesspools, and the stagnant waters along brooks and in ponds.

It was decided, emphatically and with cheers, that the resolution, heretofore passed, to employ Col. Waring, be reaffirmed and carried out.

After the meeting adjourned, Mr. Guiteau asked Mr. Bryan a question about the powers of the Board of Health, which he was not prepared to answer; whereupon, Mr. Field requested him to write an opinion on that subject; which will be found as follows:

#### OPINION ON THE POWERS AND DUTIES OF BOARDS OF HEALTH IN VILLAGES AND TOWNS.

By an Act of the Legislature of the State of New York, entitled "An Act for the preservation of the Public Health," passed April 10, 1850, (chap. 324)—as amended by an Act passed April 25, 1867, (chap. 790.)—it is provided as follows: [The amendments appearing in brackets.]

"SEC. 1. It shall be the duty of . . . the trustees of every incorporated village in this State, . . . to appoint, once in each year, a Board of Health for such . . . village, to consist of not less than three, nor more than seven persons, and a competent physician, to be the health officer thereof.

"SEC. 2. The Supervisor and Justices of the Peace, or the major part of them, of each town in this State, shall be the Board of Health of such town, for each year, whenever, in the opinion of the majority of such board, the public good requires it; and they shall appoint some competent physician to be the health officer of such town.

"SEC. 3. The several Boards of Health . . . under this Act, shall [elect from their own number a President and Secretary of such board, and] have power, and it shall be their duty,

"1. To meet . . . and fix . . . the period of quarantine to which vessels, vehicles, or persons arriving . . . shall be subject. . . .

"2. To prescribe the duties and powers of the health officer; to direct him, from time to time, in the performance thereof; and to fix the compensation he is to receive.

"3. To make [orders and] regulations, in their discretion, concerning the place and mode of quarantine; . . . the suppression and removal of nuisances; and all such other [orders and] regulations as they shall think necessary and proper for the preservation of the public health.

"4. To . . . prevent . . . intercourse with . . . any person who shall have been exposed to any infectious or contagious disease.

"5. To procure suitable places for the reception of persons . . . sick with . . . infectious and contagious disease; and in all cases where sick persons cannot be otherwise provided for, to procure for them proper medical and other attendance and necessities.

"6. To publish . . . [orders and] regulations [of general obligation,] . . . [and to make, without publication thereof, such orders and regulations, in special or individ-

ual cases,—not of general application,—as they may see fit, concerning the suppression and removal of nuisances, and concerning all other matters in their judgment detrimental to the public health, and to serve copies thereof upon any occupant or occupants of any premises whereon any such nuisances or other matters aforesaid shall exist, or by posting the same in some conspicuous place on such premises.]

“7. To issue warrants to any constable of their respective cities, villages, or towns, to apprehend and to remove such persons as cannot otherwise be subjected to the regulations by them adopted; and, whenever it shall be necessary to do so, to issue their warrant to the sheriff of their respective counties, to bring to their aid the power of the county; all which warrants shall be forthwith executed by the officers to whom they shall be directed, who shall possess the like powers, and be subject to the like duties in the execution thereof, as if the same had been duly issued out of any court of record in this State.

“8. To employ all such persons as shall be necessary to enable them to carry into effect the [orders and] regulations they shall have adopted, published, [and made,] and the powers vested in them by this Act, and to fix their compensation. [The following clause was added by an Amendatory Act, passed May 2, 1870; chap. 559.]

[“9. To impose penalties for the violation or a non-compliance with their orders and regulations, and maintain actions in any court of record to collect such penalties, not exceeding one hundred dollars in any one case, or to restrain by injunction such violations, or otherwise to enforce such order or regulations.]

“SEC. 4. Every person who shall wilfully violate [or refuse to obey] any [order or] regulation so made and published, [or any order so made and served, or posted as aforesaid,] . . . shall be guilty of a misdemeanor; and, on conviction thereof, shall be subject to fine or imprisonment, or both, at the discretion of the court; such fine not to



exceed one thousand dollars, nor such imprisonment two years. [And, in any case of non-compliance with any order or regulation which shall have been so served or posted, . . . the said board or its servants or employees may lawfully enter upon any premises to which such order or regulation relates, and suppress or remove the nuisance, or other matters in the judgment of the said board detrimental to the public health mentioned in such order or regulation, and any other nuisance or matter of the description aforesaid found there existing; and the expense thereof shall be a charge upon the occupant, or any or all the occupants of said premises, and may be sued for and recovered, with costs, by said board, in the name of such board, in any court having jurisdiction. Whenever execution upon any judgment so obtained shall have been returned wholly or in part unsatisfied, said judgment, for the amount so unsatisfied, shall be a lien upon said premises, having preference over all other liens or incumbrances whatever. . . .]

"SEC. 5. [As amended by amendatory Act, passed May 9, 1868 (chap. 761). All expenses incurred by the several Boards of Health, in the execution and performance of the duties imposed by this act, shall be a charge only on their respective cities, villages and towns; and shall be audited, levied, collected and paid in the same manner as other city, village and town charges are audited, levied, collected and paid.]

"SEC. 6. Whenever any pestilence, or infectious or contagious disease shall exist in any county poor house . . . . or in the vicinity . . . . the superintendent . . . . shall have power to cause the person . . . . to be removed. . . . .

"SEC. 7. The Secretary of the State shall cause copies of this act to be printed and transmitted. . . .

"SEC. 8. . . . . New York and . . . . Brooklyn . . . . excepted." . . . .

I only give so much of these statutes as are sufficient

to show the nature and extent of the powers and duties of the local authorities in the neighborhood of the three adjoining villages of Irvington, Tarrytown and Dobbs' Ferry, in the town of Greenburgh, Westchester co., N. Y., and whenever action is to be taken under these provisions, reference should be made to the full text: also to the act entitled "An Act for the incorporation of villages," passed April 20, 1870 (chap. 291); and to the several Acts amending the same: under which these villages were organized and from which the trustees derive their powers.

By title III., section 3, the trustees of villages have power, "as to acts and matters within the corporate bounds, to make, publish, amend and repeal rules, ordinances, and by-laws for the following purposes:— . . .

"20. To compel the removal and abatement of any public nuisance: and, if not done within such time as the trustees may allow, to cause the same to be removed or abated at the expense of the village, and to declare such expense to be a lien upon the lot on or in front of which it was, and to enforce the collection of such expense by leasing the premises in the manner prescribed in this act for the collection of unpaid taxes, or by action against the owner or occupant of such lot, or any other person who may own or control such nuisance. . . .

"25. To . . . construct sewers, culverts and drains; . . . to drain stagnant waters, and to raise or fill up low grounds, at the expense of the persons benefited, and to regulate the water courses, ponds and watering places in the village.

"26. The Board of Trustees shall have power to make and establish all legal by-laws, rules and ordinances necessary to carry out the purposes of this act, print and pay for the same, and to enforce such by-laws, rules and ordinances, and to pay the expense of such enforcement out of the corporate funds. The trustees shall also have power to prescribe penalties for a violation thereof, not

exceeding one hundred dollars for each offense; but all such by-laws, rules and ordinances shall be posted in three public places in the village ten days before they shall take effect."

By Sections 1 and 2 of title IV., expenditures are divided into "ordinary" and "extraordinary;" the ordinary being "those necessarily incurred to carry out and enforce the rules, by-laws and ordinances which the trustees are authorized to adopt by title III. of this act, and to give force to the powers therein conferred, except as such expenditures may be specifically enlarged or diminished, or controlled by other provisions of this act." By Section 3 of title IV., "No ordinary expenditure for any one specific act, object or purpose, or thing, shall exceed the sum of five hundred dollars." And, by Sections 4, 5 and 6, provision is made for raising an extraordinary expenditure by vote of the electors of the village and by a tax levy.

In my opinion, the Act of 1850, for the perservation of the Public Health, and the Act of 1870 for the Incorporation of Villages, must be construed together; and both are operative so far as the latter may not be inconsistent with the former. Repeals by implication are not favored, and are never allowed, except where inconsistency and repugnancy are plain and unavoidable. (*Hankins v. Mayor*, 64 N. Y. 18.) The re-actment of certain of the sections of one act, in a subsequent one, providing for a different scheme, is not necessarily a repeal by implication of those sections of the first act. (*Powers v. Shepard*, 48 N. Y., 540; *People v. Palmer*, 52 N. Y., 83; *Mongeon v. People*, 55 N. Y., 613; *O'Gorman v. Mayor*, 67 N. Y., 493.)

By Sec. 8 of title III of the Village Act, the trustees, in time of pestilence, have certain powers conferred; and "shall have power to appoint one or more Health Commissioners, who, with the President, shall constitute a Board of Health of the Village; and such Board of



Health shall possess the powers conferred by, and be subject to the provisions of the Health Act of 1850, and its amendments. Whether this Section be considered as confined to times of pestilence or not, is immaterial, in view of the decisions above cited. It serves, however, to show that the Legislature intended to preserve and continue the former Act; and it would be advisable, in the appointment of a Board, to designate at least three persons, as required by Sec. 1 of the Act of 1850, quoted at the commencement of this opinion.

In respect to the expense of abating a nuisance, both are substantially the same. The Act of 1850 is the most comprehensive. It covers a variety of cases obnoxious to health, not specially provided for in the Act to Incorporate Villages, and makes more effectual provisions for raising funds by taxation. In this direction, Boards of Health, under the Act of 1850, are better adapted to accomplish the purposes designed. But, where either statute provides for charging the expense of any particular thing to be done upon a property owner, it must be done in that way and not by a general tax on the entire assessable property of the village. (See my opinion of March 26, 1878, against the power of the trustees of the village of Irvington, to assess a general tax for sidewalks.)

The trustees should appoint a Board of Health, under the Act of 1850, if they have not done so already; and then pass an ordinance referring all matters to this Board which come within the purview of that Act. And if it should be found that any particular movement, like the construction of a sewer or the draining of stagnant waters, is advisable, a choice of proceedings between the Acts could then be made; giving preference to the one which might be deemed most effective.

I need not enumerate the particular causes of complaint which may be effectually removed under these laws. The most obnoxious will readily occur to almost any intelligent layman. They should be taken up and decided

upon, in detail : unless some classification of a series, in the same category, can be made : which will be difficult.

It has been held that the Board of Health of the town of Mamaroneck, in this county, had no power to remove a mill dam in the river there, as a nuisance, under subdivision 3 of Section 3 of the Act of 1850 : because such a structure is not a nuisance *per se*. The Court there substantially say, on granting an injunction : "The question of nuisance or no nuisance depends upon the presence or absence of various extraneous facts and circumstances. And it is proper that the existence of those facts and circumstances, and the question of a nuisance, should be referred to the common law trial by jury : instead of being determined by a Board of Health, and property being summarily destroyed by its order, without compensation to the owner, and without an opportunity being given him to be heard. The Legislature never intended to commit that unusual measure of power to the Boards of Health." (*Rogers v. Barker*, 31 Barb., 447.)

The powers conferred should be exercised with due caution and deliberation : and this can only be properly done by considering each case presented, as it arises : until precedents are established which may justify general regulations for all others of a like nature.

JOHN A. BRYAN.

Dated, IRVINGTON, Sept. 9, 1878.

We have received for publication the following letters from well-known and influential gentlemen :

DOBBS' FERRY, 11th Sept. 1878.

CYRUS W. FIELD, ESQ.

DEAR SIR.—In compliance with your request I joined Mr. James Wilde, on the 27th ult., in making an inspection of the brook running through the farm owned by the

estate of the late Cortland Palmer, and now beg leave to give you, briefly, the result of our observations.

Commencing at the pond on the property of Mr. Stymsus, near to the main road, we found it covered with a slimy vegetable growth of very unwholesome aspect. The surplus water appeared to escape about the sluice gate, and there being no overflow over the lip of the dam, the pond presented a stagnant, unsatisfactory appearance. It no doubt requires to be cleaned out.

A little farther up the stream, is the level meadow land, which has been overflowed the past two winters in order to make an ice pond: the water being allowed to run off in the spring; a practice which we believe to be highly injurious to the health of the neighborhood.

Proceeding along the brook, we found its course much clogged by accumulations of slimy mud; no attempt probably having been made in many years to clean out the channel. The stream, which was then very small was, at frequent intervals, much trodden and defiled by cattle pasturing in the adjacent fields, which would be avoided if the channel were cleared out, deepened a little, and kept free. The foregoing applies to the whole course of the brook.

The pond at Mr. Odell's house, no doubt, requires a thorough cleansing. Between this and the slaughter house, there is a stretch apparently of rather marshy ground, containing several large puddles, or pools, of dirty, stagnant water; but they do not appear to have connection with the brook, except, perhaps, when washed out by heavy rains.

Apart from these items, and the general condition of neglect, we discovered nothing more seriously objectionable, until we approached the vicinity of the slaughter house. As we did so, a stench of extraordinary pungency met us, most offensive even at a considerable distance from the premises. We carefully looked over this establishment, and speedily came to the conclusion that it



is conducted in a wantonly filthy, offensive manner, highly injurious to the public health. One of the small feeders of the brook is here dammed up to make a pond; but, as the supply of water in summer is quite trivial, there is no overflow except during rains, and the pond is almost entirely stagnant throughout the hot weather. A herd of hogs are allowed to wallow in it, hog-pens are built upon its bank, the slaughter house stands at its out-flow, and a hog-yard slopes down into it, the filth of which is, of course, washed down into the pond at every heavy rain: so that, altogether, it is as foul a place of the kind as can be imagined. An outrage upon decency, it ought to be abolished.

One of the industries carried on at this place is the boiling of the entrails of cattle brought from the slaughter house at Sing Sing into our midst, to make hog food. The animals thus fed can hardly be fit for human food.

Mr. Wilde concurs in the above, but has already addressed you separately on the subject. I remain,

Yours faithfully,

R. R. TYERS.

NEW YORK, Sept. 10th, 1878.

CYRUS W. FIELD, Esq.:

DEAR SIR:—With Mr. Tyers, I made a personal inspection of the brook: beginning at the Styxus pond, and the property occupied by John Loan for a slaughter house, hog-yard and pens: and find the condition of Loan's property offensive in the extreme, poisoning the brook at its source: and I think nothing can be done except to remove the hogs' yard and slaughter house to some locality where the water and the air will not be polluted by them. With regard to the Palmer property, occupied by Moses T. Odell, I think if the channel for the water were kept open, and the land not overflowed for an

ice pond, good drainage would be secured. I think the only way to obviate the objection to the filthy Styms pond would be to remove and fill up the pond. If these things were done, there ought to be no malaria from that source.

Yours, very respectfully,

JAMES WILDE, JR.

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WURZBURG, Aug. 14th, 1878.

MY DEAR FRIEND:—I have received (doubtless from you, and I thank you for them) a couple of copies of the "Irvington Neighbors." I admire the frank way in which you face the music. Mr. Terry will join you later, if you succeed, and I think you will. Mr. Hoe's apprehensions as to the amount of expenditure required are quite groundless. Even if it were a question of sewer-ing Tarrytown and Dobbs' Ferry and all between, which it is not, his estimate is much too high—many times too high. The object now in hand is to be secured, if it can be secured at all, by the well directed expenditure of hundreds, where it would be easy to waste thousands. Hoping to hear from you soon, I remain, with kindest remembrances to Mrs. Field and your family.

Yours faithfully,

GEO. E. WARING, JR.

CYRUS W. FIELD, Esq., Dobbs' Ferry.

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*To the Editor of the Sunnyside Courier:*

SIR:—In your paper of 29th I find reported a speech delivered by Mr. Cyrus W. Field before the "Irvington Neighbors" on the fever and ague question.

In this address he refers to me in such a pointed and strange manner as to require from me a few words in answer.

If Mr. Field's acts and speech mean a "Bear movement" in real estate in connection with rapid transit, I am free to confess it is the best conceived plan to effect that purpose that has ever been adopted in this community.

That gentleman evinces a most remarkable interest in the welfare of Dobbs' Ferry, for one who is neither a resident nor a property holder. He states that he employed a paid agent, a reliable person, a lady, to canvass our village and report to him, Mr. Cyrus W. Field, our sanitary condition. His agent finds our pulse feverish, and reports a number of cases of fever and ague.

I have asked Dr. Pooley, our oldest physician at Dobbs' Ferry (a gentleman who stands at the head of his profession), to state his experience in his practice in our village. His reply I enclose herewith for publication; it speaks for itself. To any unprejudiced mind this authority ought to be conclusive.

Undoubtedly there are some cases of malarial fever in our vicinity; but we cannot expect to be the exception in this year of fevers, so generally prevalent throughout our land.

That fever and ague has become an epidemic with us is not so; indeed I am informed that nearly all the cases reported by Mr. Field's reliable agent are located in the suburbs of Dobbs' Ferry, north and east of us, bordering on the line of the "Irvington Neighbors."

If the people in that locality who are afflicted with that complaint, and desire to ascertain the causes and eradicate them, will set to work practically, instead of resorting to sensation pamphlets and newspaper articles, they can do so. The Board of Health have full and ample power to remove and suppress any nuisance deleterious to the public health. Let the Board act promptly without fear or favor.

For the benefit of all who will read and learn, I beg to enclose for publication a communication addressed to the *Daily Graphic* by Prof. Hall, of the University of Michi-



gan. To my mind it seems common sense, and I have no doubt it contains much truth.

I desire no newspaper controversy, and therefore will not trouble you further. I am very respectfully yours,

Dobbs' Ferry, Sept. 10, 1878. PAUL J. ARMOUR.

DOBBS' FERRY, Sept. 9, 1878.

MY DEAR SIR:—In reply to yours of the 7th inst. allow me to state that Dobbs' Ferry has been during the summer, and still is wretchedly healthy. In short, large families come thither for the warm weather, and return to the city without contributing a fraction to the income of the poor, struggling physicians. I have prescribed for three or four patients this season with chills and fever within our village limits, and these were easily cured. Most of the cases of malarial disease that I have heard of have been along the north and eastern parts of this place, arising from causes that might be easily removed at a small expense, without the aid of experts or surveyors, by simply following ordinary sanitary rules.

In conclusion, I would say, after practising in this place for nearly thirty years, I can truly state that the medical statistics will prove that we have seldom had any epidemic, and this neighborhood stands unrivalled for the salubrity of its air and natural locality—as a situation for family residences. With much respect and esteem,

Yours, J. H. POOLEY, M. D.

PAUL ARMOUR, Esq.

At the sanitary meeting held at Dobbs' Ferry, September 12th, Dr. Pooley said: "You are mixing things up badly. You are losing all distinction between zymotic and malarial diseases. The place is distressingly healthy.

I do not regard a single shake of chills and fever bad for any man, and it can always be stopped at that point. By your neglect, however, you are preparing the way for far worse diseases. You are sowing the seed of diphtheria and typhus fever."

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[From the *Sunnyside Courier*, September 19th, 1878.]

#### SANITARY.

In pursuance of a call by the Board of Health of the village of Greenburg, (Dobbs' Ferry,) a large and enthusiastic meeting was held in Bradley Hall, Dobbs' Ferry, on the evening of Thursday, September 12th, 1878.

The meeting was called to order by Mr. D. O. Bradley, President of the village; and, on his motion, Dr. Hasbrouck, President of the Board of Health, was elected Chairman, and Mr. David B. Williamson, Secretary.

Mr. Bradley then delivered an elaborate and enthusiastic address upon the sanitary condition of the district, and read extracts from a printed report, prepared by Messrs. Ward Carpenter & Son, of Tarrytown, showing that the existence of malarial diseases was attributable to local causes, among which was enumerated, as the most prominent, the slaughter house of Loan Brothers, situated on the banks of a stream passing through the properties of the late Cortland Palmer and Mr. Wilde, and emptying itself into the Hudson River. He also read extracts from a report by Col. Waring, whom he pronounced the great expert of America in matters of drainage, and also a report from Mr. R. R. Tyers, who had personally examined the condition of the Palmer and Loan properties.

Mr. Cyrus W. Field then addressed the assemblage. He prefaced his remarks by stating that he was a resident of Irvington, but as his property was near Dobbs' Ferry their interests were identical. He stated emphati-

cally that the disease could be eradicated by the removal of local causes; and cited, as instances, the improved condition of Stockbridge and the Profile House.

Messrs. Fraser, Guiteau, and others addressed the meeting; and at one time the discussion became very animated. Finally, harmony prevailed, and the following preamble and resolutions were unanimously adopted:

WHEREAS, all malarial diseases are the result of neglect, and can be crushed out by attention; therefore, be it

*Resolved*, That we respectfully ask all good citizens to carefully examine every privy, all cesspools, pig-pens, and low spots on their grounds: and take such measures as may be necessary to purify the same.

*Resolved*, That we respectfully ask the Board of Health to rigidly enforce the laws for the preservation of the public health.

The Board of Health were, by unanimous vote, requested to co-operate with the Boards of Health of Irvington and Tarrytown, in devising means to remove any cause of trouble existing in the district in which these villages are situated.

The meeting then adjourned.

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#### ON THE RIGHT TRACK.

[From the *N. Y. Evening Mail*.]

The *Sunnyside Courier* contains an interesting account of a meeting of several of the principal property owners of Irvington and Tarrytown, at which the sanitary condition of that neighborhood was discussed by Mr. Cyrus W. Field and others with a good deal of vigor. Our readers will recollect that a few days ago we took occasion to commend the energy and frankness with which Mr. Field had exposed the sanitary condition of Irvington and that neighborhood, and that we also considered it a good



sign that the property owners in our Hudson River suburban towns had continued to take effectual action for abating the causes of malaria. As might have been expected, there has been a good deal of opposition to the recent agitation in Irvington on the subject of malaria, but the citizens who have taken in hand the abatement of the malarious condition are not at all dismayed by this opposition, and have gone on to make sanitary surveys, and to ascertain how much legislation on the subject of the removal and abatement of public nuisances is available for the practical purposes of the reform that has been instituted. Undoubtedly, the first effect of the agitation may have been somewhat unfavorable upon the current values of real estate, but the thoroughness with which the people of that neighborhood are moving in the work they have undertaken is likely to create a more favorable opinion of the desirability of a place of residence where the people have the pluck to recognize the malarious conditions that are concealed elsewhere, and to do their best to remove these conditions.

#### DIPHTHERIA IN NEW JERSEY.

[From the *New York Times*.]

The health authorities of Paterson, N.J., deny that diphtheria is epidemic in that city, and say that the reports which have been published concerning its prevalence have been much exaggerated. Their precautions to prevent it from becoming an epidemic have given rise to the reports. Twenty-five new cases have been reported since the beginning of the week, and most of these within the last two days. Since the beginning of the month five deaths have occurred from the disease. The health authorities have ordered the physicians to report all cases treated by them, but it is probable that only a small number of the physicians obey the order. The full extent of the disease may not, therefore, be fully known to the health officers. The city is said to be in a bad sanitary condition.

and diphtheria prevails mainly in those neighborhoods which are low, marshy, and malarial, and pervaded by noxious stenches. Efforts are being made to improve the sanitary condition of the parts of the city in which the contagion prevails. The principal fear is that the disease will be spread through the medium of the schools. The Principal of the Van Houten street public school has refused to permit any pupil with any kind of sore throat to attend the classes. Several cases have occurred in Dundee, Passaic City, where the disease is marked by particular malignity. Two deaths have occurred there.

[From the *Springfield Republican*, August 30, 1878.]

There were 129 new cases at Vicksburg yesterday and 17 deaths, among the latter that of J. P. Allen, city editor of the *Herald*, and Dr. E. A. Barber. Drs. Robbins and Balfour are convalescent, also Rev. Mr. Gallaway. Rev. Father McManus is down with fever. The fever is yielding to treatment more readily than at first. There are many cases of malarial fever, but it is about as deadly as the yellow variety. Among the ills of the Vicksburg people is the Egyptian darkness that prevails in the city, there being no gas—nothing but the fitful glare of an occasional kettle of tar and the coal-oil lanterns attached to the doctors' buggies as they rattle incessantly over the dark and dangerous streets. Forty thousand rations ordered by the Secretary of War are already on the way from Chicago to Vicksburg.

#### SOURCE OF EPIDEMIC DISEASES.

[From the *New York Graphic*.]

The experience and observation of half a century warrant me in saying that the time will come when it will be as disgraceful for a city or family to have yellow fever, typhoid fever, camp fever, or cholera, as it is now for school districts and families to have the itch and lousy children. Through extensive travel, from time to time, I became in love with the beautiful climate and future

possibilities of the South, and soon began to study the peculiarities of its dreadful scourge—the yellow fever. By driving into the country from the infected cities, I was astonished to find that no cases had ever originated on the plantations, clearly showing it was not a climatic, but, an endemical disease. On further investigation, I found that each afflicted city had its infected districts, while other portions of the same city were in excellent health. Further analysis showed the disease raged worse among the dissipated and poorly fed, showing conclusively the disease is dependent on bad sanitary conditions. Just the same with cholera and typhoid fevers in the North. Forty-six years ago cholera made its appearance in New York, thence communicating with the filthy landings up the river, then from Albany and Troy up the Erie canal, as if it needed the waters on which to swim, thus dealing destruction and death to all swampy stations through its whole length to Buffalo, but it had no power to climb the hills where good sanitary conditions existed. The same results were again experienced in 1848 and 1852, clearly showing the disease was endemic, and that it complied strictly with the rules of etiquette—never to visit a place to which it had not been invited by its bad sanitary conditions.

Fifty-four years ago a robust, middle-aged Vermont uncle, who boasted a 100 cow dairy, suddenly died of typhus fever, generated in a field where the whey was fed, being almost literally poisoned by his own hand.

Forty years ago it was talked in Central New York that the diseases were changing from malarial to a typhoid type. What were the causes? Highly cultivated lands removed the malarial causes. The feculent matter from drains, water closets and grave yards began to poison the water supply, and often emitted deleterious gases. These causes are general, but villages and cities suffer much more than rural districts.

Though we read and talk of villages and cities being dreadfully afflicted with some of these diseases, we find,



on investigation, it is limited to neighborhoods and people of peculiar habits.

A few winters ago it was said that Chicago was being afflicted with the most malignant type of scarlet fever that was ever known. So much alarmed was the country, they dared not visit their Chicago friends, and funeral ceremonies were prohibited.

Being familiar with the city, and having previously come to the conclusion that deepening the canal to ten feet of water to Joliet would give Chicago the possibility of becoming the healthiest large city in the world, I felt curious to know the cause of Chicago's great affliction. Investigation showed that the disease was confined to the districts along the branches of the Chicago river, and mostly the south branch, where are the great slaughter houses of the city.

Four years ago I came home from a ten days' absence, and was told that a neighboring young lady had died of typhoid fever, and the rest of the family were quite sick; I was shocked, for ten days before this girl and her family were among the most robust to be met on the street. Their residence was on the highest point in this vicinity, and supposed to be one of the healthiest in the State. What could be the cause of their illness? They were well-to-do and intelligent farmers, but, like many farmers, in a hurry for spring work, they had left the spring cleaning of the cellars for a rainy day, and premature hot weather stimulated decay in refuse vegetables, carrying sickness and death to the family.

Three years ago a neighbor, whose palatial residence and grounds occupies one of the most healthful sites in this or any other State, and whose constitution and health were so good that his weight had not varied a pound in five years, came near dying of typhoid fever. This gentleman being of good habits, and whose residence and grounds seemed to be in the best possible sanitary condition, I felt puzzled to account for the cause of his illness.

I have since learned that the gentleman, with an empty stomach and in a fatigued condition, assisted in the adjustment of an old sewer connection with a cesspool.

One year ago last winter, the Toledo papers said that malignant diphtheria was raging dreadfully in that city. It was especially severe on boys and girls from six to twenty years of age. They soon found that it was confined exclusively to children of that age, and finally to children who attended the Jefferson street school, whose drinking water was found to be poisoned by the escape of feculent matter from the closets.

Did space allow, hundreds of clearly defined cases could be deduced to show that yellow fever, typhoid fever and cholera are neither of them climatic, epidemic or hardly endemic diseases, but entirely dependent on the filthy condition and habits which invite them. Camp fever and ship fever are dependent on similar causes, and all are most surely avoidable in the natural climate of any country. I am also certain that with good sanitary conditions in both, the climate in the lower latitudes is healthier than in the higher latitudes. A daily maximum heat of seventy to eighty-five degrees is much healthier than the extremes from zero to ninety-five degrees.

To keep densely populated countries in a good sanitary condition, the dead should be cremated, cities should be thoroughly sewered and daily cleansed by an abundance of water.

All feculent matter in villages and rural districts should be daily utilized for fertilizing purposes by a copious mixture of fine dry earth, muck or charcoal. Of course, the stagnant water in swamps must be removed by ditches to prevent malarial diseases.

The earth can absorb large quantities of feculent matter, but, when gorged, she vomits forth disease and death to all in the vicinity.

ISRAEL HALL,

University of Michigan, Department of Science, Literature and Arts, Ann Arbor, August 24.

THE BOARDS OF HEALTH OF TARRYTOWN, IRVINGTON,  
AND DOBBS' FERRY.

From the *Sunnyside Courier*, Sept. 26th, 1878.

At a joint meeting of the Boards of Health of the three adjoining villages of Irvington, Dobbs' Ferry, and Tarrytown, held at the Sunnyside Athenæum, at Irvington, on Saturday, September 21st, 1878, at 4 P. M.

These Boards were represented as follows:

Tarrytown—James Alexander, President: Theodore F. Baylis, and John Dennis.

Dobbs' Ferry—Dr. Hasbrouck, President: and D. O. Bradley.

Irvington—F. W. Guiteau, President; Charles Lawrence, John Hunter, and Dr. Fulton.

Mr. Cyrus W. Field and Mr. John A. Bryan were present by invitation.

Dr. Hasbrouck was appointed Chairman, and Mr. D. O. Bradley, Secretary of this meeting.

Mr. Guiteau questioned Mr. Bryan on some points contained in his legal opinion lately published, and Mr. Bryan advised both as to organizing the Boards and their modes of procedure.

Several cases, where complaints had been made, were discussed. With but very few exceptions, it was found that parties notified had cheerfully complied with orders of the Boards.

Mr. D. O. Bradley thought that general recommendations coming from the Boards, in joint session, would be uniformly acted upon by nearly all the inhabitants of the district: thus saving the necessity of adverse action in many cases. On his motion, the following resolutions were unanimously adopted, and he was appointed a committee to print and placard the same at the joint expense of these Boards:

"That the large increase of population in our villages has brought with it changes likely to lead to an impoverishment of the public health, and to an increase of sickness, unless prevented by a thoughtful attention to

sanitary laws. Our villages have outgrown the conveniences which answer for ordinary country life, without having attained sufficient taxable strength to warrant the introduction of a general system of sewerage and water supply,

"We, therefore, advise

"That a very careful supervision be maintained, by individual owners, over cesspools and privy vaults; that the same should be frequently cleaned, and should, during the warm season, be purified as often as once a week, by the use of lime and other disinfectants.

"That the filthy character of hogs and hog pens is such as to make them always more or less dangerous to human life;—that it is doubtful if either should be tolerated in the midst of dense populations, and that the public health requires the most careful supervision over them.

"That all marshes and swampy lands, within our villages, should be subjected to thorough drainage at once.

"That ice ponds, which are flooded in the winter, and from which the water is withdrawn in the summer, are highly prejudicial to the public health, and should be abated.

"That the frequent obstruction of the brooks, which convey the surface drainage through our villages, has become an element of danger. We recommend that all ponds, which have no value in furnishing a water supply to houses or to manufactories, be removed, and that these brooks be left, as far as may be practicable, to their natural courses.

"That sunlight is essential to health; that trees and shrubbery in too large quantities, or in too close proximity to dwellings, may work serious injury.

"We affirm as our belief, that all malaria is engendered by local causes; and that the surest way to cure the disease is to remove the cause."

JAMES ALEXANDER, Prest. Village of Tarrytown.

F. W. GUITEAU, Prest. Village of Irvington.

D. O. BRADLEY, Prest. Village of Greenburgh.



The Boards pledged themselves to a rigid enforcement of all the laws for the preservation and protection of the public health.

Reports were presented from each of the villages, showing that a very considerable amount of sanitary work is being done.

Mr. Field submitted advance sheets of another pamphlet; this being the third; and he states that the regularly authorized publications in this philanthropic movement, would be furnished to any member of these Boards on application:

1. The general report of Col. Geo. E. Waring, Jr., the eminent Sanitarian Engineer, accompanied by auxiliary reports of Dr. Caruthers and Messrs. Ward Carpenter & Son, who are distinguishing themselves in the same field of industry. That pamphlet also contains what might be called a *jeu d' esprit* of the "Irvington Neighbors;" on the plan of treating vexatious subjects in a pleasant way. The good nature which prompted this first publication has animated me throughout; and I do not mean to be betrayed into any such loss of temper as has been evinced by a few of my neighbors who have characterized the agitation as mischief making.

2. It was to correct an erroneous impression on this point, that the second publication was made in the *Sunnyside Courier*, of August 29th, 1878, which is a report of what took place at a meeting held in this Hall, on August 16th; and it may be considered as supplementary to the first pamphlet.

3. The third is a pamphlet containing an elaborate report of Messrs. Ward Carpenter & Son on the "Hamilton Pond," in Irvington, and the "Willsea Brook," in Dobbs' Ferry; a painstaking document, accompanied by several lithographic maps and surveys, including the topography of the territory affected. The capacity and talent displayed by these gentlemen in that work encouraged me to give them further orders: sufficient, as we shall see

presently, to sweep in many of the plague spots of these beautiful villages.

4. The fourth is a report in the *Sunnyside Courier*, of Sept. 12th, 1878, of another meeting held, in this Hall, on Sept. 6th, which brought the whole movement into practical shape; the leaven having worked out logical results, and the popularity and success of the enterprise having become emphatic. That report also contains Mr. Bryan's legal opinion on the "Powers and Duties of Boards of Health." Before we got this opinion, we had only blind guides. Every man among us was acting as his own lawyer, and we are all surprised to find that the law gives the Boards the most extraordinary powers. You have only to see to it that you are properly organized and that your procedure against any person or property is taken under due advisement.

5. The fifth is the last pamphlet, proof sheets of which I now submit. It contains further Reports from Messrs. Ward Carpenter & Son, on the "River Front" and on the "School Buildings and Grounds," besides other important matter, covering the entire neighborhood; including the three villages. It contains a lithographic drawing of the entire river front, from Tarrytown to Dobbs' Ferry.

I propose to print another pamphlet [this one] containing the Reports from the *Sunnyside Courier*, to which I have just referred; and the four pamphlets will then cover all we need to preserve, up to this time, for future reference.

Let these be followed by Col. Waring's next Report, and then, by a final Report that the work has been thoroughly accomplished; and we shall have a mass of material to be republished which will serve as a precedent for imitation in other localities where there is need of a purging, not only of malaria but of lies; and where we must send missionaries, if they do not mend their ways.

Mr. Field then referred to letters in the *Sunnyside Courier*, of Sept. 19th, 1878, from Mr. Paul J. Armour and Dr. J. H. Pooley, calling in question the correctness

of Miss Todd's Report giving about 78 recent cases of fever and ague in Dobbs' Ferry. Mr. Armour told me there was not a single case of the disease known there; which induced me to employ that well-known and reliable lady to find out whether he was accurately informed. I not only learned what she reported, but that Dr. Judson, his next neighbor, on the north, had four cases in his family this summer; also, that his opposite neighbor, Mr. Ross, had also a case in his family this season. Both these gentlemen bought their land from Mr. Armour, who has more for sale. He was indiscreet enough to intimate, in his letter, that this is a "bear movement" to first depreciate and then to buy real estate. If he repeats this line of argument, "I commend him," as Webster did Hayne, "to a prudent husbandry of his resources." Mr. Field continued: Dr. Pooley attended a meeting in Dobbs' Ferry, Sept. 12th, at which he said:

"You are mixing things up badly. You are losing all distinction between zymotic and malarial diseases. The place is distressingly healthy. I do not regard a single shake of chills and fever bad for any man, and it can always be stopped at that point. By your neglect, however, you are preparing the way for far worse diseases. You are sowing the seed of diphtheria and typhus fever."

His letter, on a careful reading, will be found to fall far short of what Mr. Armour claimed for it when he enclosed it, with his own, for publication. It shows rather a limited practice in such cases than it does the absence of them.

Mr. Bradley stated that when he heard of Miss Todd's Report, he thought it very much exaggerated; but, upon investigation, he had found it an under-estimate. He knew of nine cases which might be added, and he did not doubt there were at least one hundred cases there now. The people around here, who, like myself, do business in New York, know very little of what is going on in our midst. For example, I own 35 acres adjoining the

slaughter house which pollutes the Willsea brook for about three miles, running through Dobbs' Ferry, and I never knew, until Mr. Field unearthed it, that there was such a thing on the stream.

Mr. Bradley also spoke of the ridiculous spectacle of a lot of little stagnant ponds, to beautify the landscape, when the broad expanse of the Tappan Zee was spread out before us. Why thus shut up the "books in the running brooks," of which the immortal bard speaks?

Mr. Alexander inquired whether the depreciation of property here was not attributable to the "hardness of the times," the same as elsewhere.

Mr. Bradley replied that the times undoubtedly affected property here, but that the very high prices heretofore ruling would have been little affected if the reputation of the neighborhood for health had been sustained. The lands, for agricultural purposes, were not so desirable as in many other localities near the city, for which \$40 an acre would be considered a fair price. Mr. A. T. Stewart purchased the land where Garden City now is for about that per acre. So that the high prices on the Hudson River were not merely in consequence of proximity to New York City, nor on account of the fine views. These alone would contribute less to the prices than a well-established reputation for health would without them. Men of wealth, who chiefly give importance to this locality, are not necessitated to come here, and will not if they suppose the health of their families will be imperilled. Without this essential, they will not come at any price. Make it healthy, and then its proximity to the metropolis and the fine views will maintain "fancy prices," exceeding those in less favored suburbs. Our locality is, confessedly, the best, in views and accessibility; and, let the times be what they may, there are always fortunate men enough to keep up competition and ensure a demand for such a desirable class of property, restricted as it is in area, provided they can be reasonably assured that they will there enjoy the blessings of health.



Mr. Bryan remarked that the neighborhood had a worse reputation for healthfulness, before this agitation, than it has now. He had seen signs, already, of property here becoming in demand; simply on the strength of this movement. He considered it a good financial policy; at all events, it had the merit of candor, which is often unpopular, at first, among those whose pride or purses are affected; but it finds favor in the end. The first shock being over, he had observed a gradual acquiescence and then an approval, until we may say our people are now substantially of one mind on the subject.

Mr. Field repeated what he had said on a former occasion: That property in Stockbridge, and Lenox, Mass., which enjoyed excellent reputations for freedom from malarial disorders, had been steadily rising in value these hard times; and, he added, that if he had invested the same amount of money in land there that he had here, it would have been worth a very large amount, instead of the beggarly sum the land he had bought here would now bring. I offered a few years ago \$80,000 cash for the place adjoining mine for a friend. It was refused, and the mortgagee has lately bought it in for \$25,000; and I would have found a friend to purchase it for a very much higher price if it had not been for the Chills and Fever. Make the place healthy, and I know several who stand ready to locate here. [He mentioned some names, and stated attendant circumstances.] Let it remain as it is, and I shall move away. Others have done so already; and I know several more who will not stay. These are plain facts. They stare us in the face; and, as business men, —to say nothing of worthier considerations,—we should grapple with them in a business way. We want experts to help us; engineers, sanitarians, and lawyers; and I hope we shall not verify the adage about "saving at the spigot."

Mr. Guiteau thrilled those present by a graphic and eloquent account of the breaking up of a family on premises

near his own, within the present month, and of their fleeing from the town. The head of this family was a gentleman whose remarks, heartily approving this movement, are published in the first pamphlet. More particular public mention of the case is not considered proper; or its recital would crush out any further opposition, and arouse an irresistible indignation against those who propose longer to tamper with this subject.

These are but meagre outlines of what was said and done at this important meeting. There was a spirit manifested by these earnest men which promises the best results. They adjourned to meet again the next week, Saturday, September 28th, 1878, 4 P. M., at the Sunnyside Athenæum.

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The following is Miss Todd's Report:

"In the following list will be found the names of families who have recently suffered from malarial disease, and the names of those who are battling against it now. People have been, in several instances, unwilling to admit the presence of the disease where it evidently has shown itself. The trouble is that it is far more prevalent than it may appear to be from the list.

(Here follows a list of seventy-eight names.)

These families reside between Mr. Wilde's and General Bowen's, Dobbs' Ferry. They all have had the disease within a month, and many of them suffer from it at the present moment."

The list of names, referred to above, was sent to a leading citizen of the village of Dobbs' Ferry, and he returned it with the addition of the names of nine persons not included therein, making in all eighty-seven.

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Dobbs' Ferry, Sept. 18th, 1878.

DEAR MR. FIELD:—In reply to your inquiry, I beg to say that, within the past three months, I have had in my

household, under medical care, two cases of malaria and one case of pronounced chills and fever. Neither of the patients has been so affected before. The latter case was that of a servant, who has been only one year in the States, and but three months in my employment. Before coming to Dobbs' Ferry she had lived in Brooklyn since her arrival in the country. Heartily wishing you every success in your efforts to banish this plague of malaria from our hitherto very healthy neighborhood,

I am, dear Mr. Field, yours truly,

W. A. Ross.

To Cyrus W. Field, Esq.,  
Dobbs' Ferry,

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OFFICE OF GRINNELL, MINTURN & Co., }  
78 South Street.

New York, Sept. 17, 1878.

DEAR MR. FIELD:—I have read with interest the report you so kindly sent me on the Hamilton pond, etc. There is no doubt in my mind that the malaria along the river bank is largely due to want of proper drainage. We live under malarial influences, and only by proper care can escape the consequences. As evidence of this it is well known that the sod cannot be turned up to any extent near the house, on any place on the river, no matter how previously free from malaria, without danger of causing sickness.

Owing to the general commercial depression, property is now entirely unsalable on the river or elsewhere, and therefore no time could have been better chosen to come out boldly and advocate proper sanitary inspection, with the object of taking steps to eliminate the causes of disease, as far as our present knowledge of the laws of health admit of it.

I am sure the community ought to be indebted to you

for the energy you have displayed in turning attention to a matter of such vital public interest.

I am, dear sir, very truly yours,

JOHN W. MINTURN.

Cyrus W. Field, Esq.

CYRUS W. FIELD, ESQ.,

DEAR SIR:—I have carefully read the report on the condition of Hamilton's pond, etc., by Ward Carpenter & Son, and I think they have taken a correct view of the subject so far as they have gone. There is no doubt of the fact that enormous quantities of malaria are generated by the condition in which the ponds and streams of which he speaks are; and the changes and improvements he proposes will, in a great measure, perhaps almost entirely, remove. But the work must not stop there. The subject of drainage and sewerage from cesspools and privies, and pig pens and such, is of vast importance, and one that cannot be neglected if the health of the community is the object of consideration. The cesspool mentioned by Mr. Carpenter as forcing its overflow into the brook on Mr. Barney's property is sufficient of itself, during the hot months of July and August, to produce an epidemic of diphtheria that may extend through an entire community, and which may take weeks, perhaps months, to control.

Permit me to add that I think you have begun this undertaking in the right way, and, indeed, in the only way in which, if carried out properly, it can be successful. I think that all who are to-day doubtful will, in the next few years, be convinced of the correctness of your views.

Very respectfully,

J. B. FULTON, M. D.

Irvington, Sept. 17th, 1878.



## FIGHTING MALARIA.

[From the *Yonkers Statesman*.]

The villages north of Yonkers on the Hudson are in dead earnest in their efforts to discover and remove the causes which have so recently made malaria prevalent in their midst. The largest meeting ever held in Dobbs' Ferry met, pursuant to a call of the Board of Health, at Bradley's Hall, on Thursday evening of last week. Every physician in the place, and every clergyman but one, was present. The hall was packed to overflowing. Although the evening was excessively sultry, the audience remained attentive listeners to the close. Dr. Joseph Hasbrouck was made chairman, and Mr. D. B. Williamson acted as Secretary.

Mr. D. O. Bradley presented several documents which had been served on the Board of Health, showing how, in various parts of the village, the public health was being impoverished and disease engendered. Attention was called to the fact that the three streams which flow to the Hudson from the summit of the hills at the east, are obstructed by nineteen dams within the mile square covered by the village limits. Before these water courses were thus interfered with, the health of the neighborhood was exceptionally good. Since these dams had been thrown up, and since the village population had largely increased, there had been such marked deterioration as to demand immediate attention. No one cause was fairly chargeable with this unfortunate result. Badly regulated slaughter houses, cold, soggy marsh land, defective domestic arrangements around private dwellings, combined with the obstructions of the water courses, were all united in working the mischief. Five years ago malaria was unknown in this neighborhood. Its health could, by thoughtful action, be restored at once to its normal condition.

Mr. Cyrus W. Field quoted several instances showing that malarial diseases are subject to easy control. With our remarkable advantage of location, such diseases could

have no foothold except as the result of negligence. By joining hands, and each doing his part, all malarial traces could be driven out.

Mr. Guiteau, President of the village of Irvington, said the entire Board of Trustees of his village were taking up the question of thorough sanitary purification, and they asked the co-operation of the trustees of the adjoining villages in similar work.

Resolutions were passed with an unanimous vote, the audience rising to express their approval, asking every citizen to carefully examine their vaults, cesspools, pigstys, and low, ill drained places on their own grounds, and to purify the same. The Board of Health were instructed to rigidly enforce the laws for the preservation of the public health. The village authorities were invited to co-operate with the neighboring villages.

We should not be surprised if investigation should develop the fact that the nineteen dams which obstruct the streams exercise a decided influence in causing malaria. Some thirty years ago, certain residents of Mamaroneck conceived the idea that that place might be made a manufacturing centre. Accordingly a dam some thirty feet high was constructed at the mouth of the Sheldrack to furnish water power, and a large factory was erected. The back water caused by the dam covered two or three hundred acres of land; and whereas the locality was perfectly healthy before, the region at once became almost uninhabitable.

Operatives attracted by the factory would soon become so sick that they could not work, and so poor that they could not get away. Meetings were held, and it was proved conclusively that the dam was the cause of malaria. It was indicted by the Grand Jury as a nuisance, but after much negotiation a compromise was effected with the owners, the dam was demolished, and the prevailing sickness disappeared. Here is an important fact that may help our neighbors up the river.

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At a special meeting of the Board of Trustees of the Village of Irvington, held at the rooms of the Board, in the building of the Sunnyside Athenæum, on 26th Sept., 1878, at 7 o'clock, P. M.

Present :—Messrs. F. W. Guiteau, President, Harriman, Hunter and Lawrence.

The President stated that this meeting had been called in consequence of a question having arisen as to the regularity of the organization of the Board of Health in this village; that he had consulted Mr. John A. Bryan, who had written a legal opinion which had been published; and that it appeared to be advisable to proceed in accordance with its suggestions. Whereupon, on motion of Mr. Hunter, the following preamble and resolutions were adopted :

WHEREAS, by Section 1 of an Act of the Legislature of the State of New York, entitled "An Act for the preservation of the public health," passed April 10th, 1850, (Chap. 324), it is made the duty of the Trustees of every incorporated village in this State to appoint, once in each year, a Board of Health for such village, to consist of not less than three nor more than seven persons; also a competent physician, to be the Health Officer thereof; and,

WHEREAS, each of the persons hereinafter named and appointed is of the age of twenty-one years and upwards, is now a citizen of this State, is now a resident and elector in this village, and is otherwise duly qualified; and,

WHEREAS, the Health Officer, hereinafter named, is also a competent physician; therefore be it

*Resolved*, that Cyrus W. Field, Augustus C. Richards, and Edward C. Gregory be and they are hereby appointed such Board of Health of this village; and that J. B. Fulton, M. D., be and he is hereby appointed the Health Officer thereof; and be it further

*Resolved*, that the said Board of Health be, and it is hereby authorized to occupy the rooms of this Board of Trustees in this village; and be it further

*Resolved*, that the persons so appointed continue in office until the next annual election of Trustees in this village.

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At a preliminary meeting of the persons appointed as a Board of Health, in the village of Irvington, town of Greenburg, county of Westchester, and State of New York, held at the rooms of the Board of Trustees of the said village, on Saturday, Sept. 28, 1878, at 4 o'clock P. M.

Present:—Messrs. Cyrus W. Field, Augustus C. Richards, and Edward C. Gregory.

Dr. J. B. Fulton, the person appointed Health Officer, was also present.

Mr. John A. Bryan, Counsellor at Law, was present by invitation.

The President and Trustees of the village were in attendance, by request, and they submitted their minutes of a special meeting held by them on Sept. 26th, 1878, which were read and ordered to be recorded in this book of minutes; from which it appears that the persons above named as members of this Board of Health, and as the Health Officer of this village, have been regularly appointed, as required by law.

Mr. Bryan advised that the members of the Board of Health and the Health Officer, each, within fifteen days, take the usual oath of office before the proper officer—the one most convenient in this instance being the County Clerk of this county, and file the same with him, as prescribed by law (1 R. S. 119, 120, 100); which oath is as follows: "I do solemnly swear [or 'affirm,' as the case may be] that I will support the Constitution of the United States, and the Constitution of the State of New York, and that I will faithfully discharge the duties of the office of a member of the Board of Health [or 'Health Officer,' as the case may be] of the village of Irvington, in the town of Greenburg, in the county of Westchester, and



State of New York, appointed by the Board of Trustees of the said village, under Section 1 of Chapter 324 of the Laws of 1850, according to the best of my ability ; " forms of which oath will be found printed in a book at the County Clerk's office.

The several members of the Board and the Health Officer accepted their appointments as such, and agreed to attend at the County Clerk's office before the day to which they will adjourn, and there take the required oath of office.

The Board thereupon proceeded to transact the following business, provisionally ; subject to approval at their next meeting, after taking the oath of office.

Mr. Bryan advised that the law expressly required the Board to elect a President and Secretary ; and that, by implication, a Treasurer was necessary.

Mr. Cyrus W. Field was elected President ; Mr. Edward C. Gregory was elected Secretary ; and Mr. Augustus C. Richards was elected Treasurer of this Board.

Mr. Bryan was appointed Counsel of this Board.

The President and members of the Board of Trustees of the village were invited to attend the meetings of and to co-operate with this Board in carrying out the provisions of the law ; which invitation they accepted.

A petition was received from Mr. F. O. Matthiessen, asking the abatement of an alleged nuisance in a cow-yard of Edwin Acker, on premises adjoining ; which petition was referred to the Counsel of the Board for his opinion.

The Board requested the Counsel of the Board to submit, at the next meeting, such proposed orders and regulations as appeared advisable for the Board to adopt, with such further suggestions as may appear to him to be necessary or expedient under the law.

The Board adjourned to Wednesday evening, Oct. 2d, 1878, eight o'clock, at the same place.

*To the Board of Health of the Town of Irvington:*

Your petitioner respectfully represents that his family occupies certain premises on Broadway in the Township of Irvington. That the adjoining premises are occupied, as your petitioner is informed and believes, by one Acker. That there is a brook between the two premises; that near the margin of this brook, occupied by said Acker, there is an open cow shed, where are kept a large number of cows; about seventeen in number; that the premises of said Acker, about said cow-shed, and on the margin of said brook, which is used as a yard for these cows, are kept in a filthy condition. That manure and urine from these cows mingle with the waters of the brook, which flows into the pond on the premises of your petitioner; that the urine and manure collect in said pond, poisoning the waters of the brook and pond, and creating stench therein, which causes malaria, and is very detrimental to the public health.

Your petitioner furthermore represents that when the wind blows from the direction of the cow-sheds towards your petitioner's house, the stench therefrom is intolerable, and provocative of disease to the members of your petitioner's family. That the roadway leading to your petitioner's house is rendered so unhealthy, by reason of the above facts, that it cannot be used without detriment to health. That your petitioner respectfully represents that said cow-shed and yard are a public nuisance which ought to be abated, and your petitioner prays that your Honorable Board will take such action in the premises as will protect the public from this nuisance.

F. O. MATTHIESSEN.

From the *New York Times*, Sept. 25, 1878.

HOW TO PREVENT TYPHOID.

The appearance of typhoid in one of the healthiest mountain villages of Connecticut is an indication of what

any of our Hudson River or New York villages may expect where there is no regular water supply. It is well understood now that the poison of typhoid is especially conveyed by well water, into which fecal matter may possibly filter or drain through the ground. In most country towns and villages, the wells are dug near the cesspools; often on a declivity below them. Beneath the surface there are, of course, all kinds of natural drains, or strata of sand and rock, through which the moisture flows from one point to another. Within a moderate distance one can never be certain that the pit for a sink or a cesspool does not drain directly into the pit for spring water. This is especially the case where a village is built on a side-hill, like most of the Hudson River towns. The sinks and closets above, in many of these villages, flow as by artificial drainage into the wells and springs on the streets below. The drainage is a kind of ingenious machinery for promoting the growth of diphtheria and typhoid. These diseases will inevitably increase in our rural districts till arrangements are made for better drainage, and a full water-supply from a distant source is obtained.

Among our Hudson River towns, Youkers has incurred a heavy debt for a full and pure water supply from some streams to the east, but the burden will be more than balanced by the increased value given to property and the improved health of the population. On the river just above, the villages of Hastings, Dobbs' Ferry, and Irvington have no public water supply, though the houses are built on a side-hill, where the drainage from the cesspools of one street must necessarily be into the springs of the streets below. The danger is sometimes avoided by the wealthier classes by drawing their water from ponds and springs in the hills above. The great body of the inhabitants, however, are exposed to all the evil effects of this vicious system of drainage. These villages embrace some of the most beautiful localities on the river, and in-

clude a great deal of valuable property. They ought, in their own interest, to combine in a scientific system of drainage and in a common water supply from the numerous ponds and streams which take their source on the hills between the Hudson and the Neperhan; or, by going further north, a union could be made with Tarrytown for obtaining water from ponds of larger extent and greater depth.

American towns are certainly far in advance of English or Continental in the matter of water supply; but they might learn much from the ancient Roman towns and cities; and when our aqueducts span the hills as the old Italian did the Campagna or the mountain ravines of the south, we can boast of modern progress and material civilization. A pure water supply at once reduces the death-rate and lessens the weakening attacks of many diseases. A city of well-planned drainage and with plenty of pure water seldom suffers under such pestilences as are now desolating Southern cities. The drinking-water, in one of the great cholera epidemics of London, was the especial means of conveying the disease, so that one side of a street, supplied from the river below the discharges of the sewers, was desolated, while the opposite, supplied with pure water, almost escaped. It is true that in such nests of disease, as are many of our tenement houses, typhoid, even where the water is pure, may prevail. But under these the drainage is often detestable; the air about them is always foul, and all the conditions of life favor the disease.

Throughout the interior of this State a good sanitary engineer ought to be employed in every town and village, to report on the best method of drainage and the cheapest water supply. A portion of the increase in malaria throughout the rural districts must be due to the population exceeding the proper supply of water and the necessary drainage. What is needed is not a local but general reform. Science is able to meet every one of these mala-



dies. Pestilence is seldom found where sanitary reform has full sweep. It is not at all uncommon, even in malarious districts, to come across places carefully drained and open to wind and sun, where intermittent fever or any effect of malaria is unknown. Typhoid is as much under control as small-pox. It is a marvelous evidence of the strength of our constitutions and the recuperative influences of our climate, that after all our sanitary blunders and defective arrangements, the health of the American people is, on the whole, so good.

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From the *New York Evening Post*, Sept. 24, 1878.

Colonel George E. Waring, Jr., of Newport, has been elected a member of the Sanitary Institute of Great Britain.

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(From the *Sunnyside Courier*.)

TO THE RESCUE.

The ladies of Irvington have taken up the subject of the health of the neighborhood. They held their first meeting on Saturday, September 28th, and we here insert a letter they have addressed to Mr. Cyrus W. Field:—

“The following ladies wish to express to Mr. Cyrus W. Field their grateful acknowledgments for his clear exposition of the sanitary condition of Irvington and its neighborhood, and will do all in their power to assist him in his efforts to eradicate the injurious influences.

[Signed,]

Mrs. J. Howe,	Mrs. F. A. Foster,
Mrs. W. A. Haines,	Mrs. B. S. Clark,
Mrs. R. Skeel,	Mrs. J. A. Bryan,
Mrs. Dr. Prince,	Mrs. D. B. Williamson,
Mrs. W. H. Fogg,	Mrs. A. L. Barney,
Mrs. R. A. Sawyer,	Mrs. A. C. Richards,
Mrs. Henry R. Worthington,	Mrs. W. S. Gurnee,
Mrs. W. F. Cary, Jr.,	Miss Edith G. Richards.

Irvington, Sept. 28, 1878.”

PAROCHIAL RESIDENCE, IRVINGTON ON HUDSON, )

October 2, 1878. (

CYRUS W. FIELD, ESQ.

DEAR SIR.—I return you the Report you so kindly sent to me for perusal. It is, I think, very instructive on the subject: "A work well commenced" (it is said) "is half finished."

You have commenced in the right way (such is my opinion at least) and all should wish you "God speed."

Respectfully,

(Signed) P. J. MAGUIRE, Pastor.

From the *Sunnyside Courier* of Aug. 15, 1878.

#### REPORT.

As requested, we have examined the tract of land in this village bounded by Croton Aqueduct on the east, and Hudson River on the west: by Prospect Avenue and land of George Lewis on the north, and by White Plains Road and Van Wart Avenue on the south; comprising lands owned by Messrs. Roberts, Pritchard, Cleveland, Orr, Dodge, and Hoe, and the Misses Copcut, with a view to its condition as respects the enjoyment and health of its occupants and of the public in general.

We find that this tract contains two basins, one on each side of Broadway, separated by a low ridge, on which stand the residences of Messrs. Hoe and Orr and the Misses Copcut. Originally the basin on the east side had at best a tortuous outlet into the second, and the connecting channel did not penetrate the ridge at a sufficient depth naturally for a free discharge of all the surface water, much less the underground drainage, a condition of things rendered the more objectionable by the fact that the subsoil is clay, which retarded the filtration of the rain-fall and overflow of Mr. Roberts' brook into the gravel beneath.

The first evil, the want of natural outlet, was remedied by the construction, in 1870, of a main drain-pipe of ample dimensions from the aqueduct culvert through lands of Messrs. Roberts, Pritchard, Cleveland, and Orr, and terminating at the old stone drain opposite Mr. Orr's spring, from which point the outfall was all that could be desired. Into this main was conducted a system of tile from the wettest portions, thus attacking the second evil, a wet subsoil; and since that time there has been a marked improvement in the whole basin east of Broadway. With proper care of the two chief slit chambers, by looking after the small tile already laid, and by extending the system of underground drainage, there is no doubt that this portion of the tract will continue to improve. At the present time its condition is such that serious annoyances are no longer manifest nor need be apprehended.

Coincident with the construction of this main outlet pipe, however, has arisen a new evil that, unless promptly and thoroughly attended to, will prove worse than the former swamp. Being the only outlet, and a very convenient one for the owners east of Broadway, it has become the channel for their household waste. The result is that while the tract east of Broadway has been gradually freeing itself of the old evil, the tract on the west side has been as surely deteriorating. All this sewage largely reinforced by the wash from a largely traveled highway has been turned into the open water courses on the west side, and spread out over the surface of its once beautiful ponds, there to breed noxious influences. If this were all, the presence of such volumes of water, even though stagnant, would have some effect in alleviating the consequences, though at best the defilement and disfigurement would be exceedingly repulsive.

But these ponds are so situated with respect to their margins that of necessity the soil is soaked to a great distance; and the particles of foul matter percolating with the water reach points where they fester just at or be-

neath the surface, conditions more harmful than before. In this respect the pond of the Misses Copeut is in the worse condition, the adjacent land having become broken up into bog holes and tufts of marsh grass. The lawn of Mr. Dodge is rendered fairer to the sight by careful cultivation, but conceals under its surface an amount of poisonous sewage far beyond its capacity to transmute, and as a consequence must yield up deadly exhalations.

As we have no desire to create unnecessary alarm by magnifying the deleterious condition of this second basin, we pass directly to the consideration of the remedy, the nature of which, from the statements above made is clearly defined and very simple. There may be at work in other localities wider influences for evil that defy the power of man, either to understand or to avert; but it would seem that the bad effects thus far noticed in this vicinity are merely the result of neglect easily obviated.

The first recourse should be, by a united and amicable effort on the part of all the land holders in the entire tract, both sides of Broadway, on conjunction with the village authorities, to secure **A SEPARATE, SUFFICIENT, AND RELIABLE OUTLET THROUGH TO THE HUDSON RIVER FOR ALL SEWAGE AND HOUSEHOLD WASTE, AND FOR THE WASTE FROM THE HIGHWAY;** the pipe laid in 1870 being set apart solely for brook and underground drainage, which would deliver clear and sparkling into the ponds below; the sewage conduit to be securely sealed, and connections made therewith only by trap and ventilated soil pipes.

For receiving and settling the road wash before passing it into the sewer, a silt basin or chamber, properly covered, should be constructed under the west curb of Broadway, in line with the old stone bridge that now brings the wash from east gutters. From this chamber a 12-inch pipe would pass to the sewer pipe. As far as this point the sewer may follow nearly the route of the present pipe, or, better yet, may obtain a greater fall by keeping more to the east and on higher ground, a ques-



tion to be hereafter determined. From Broadway to the river the route for the new sewer that possesses most advantages diverges to the north of the water course, passing between Mr. Orr's stables and his gardener's cottage, and around to the north and west of Mr. Dodd's pond, striking his south line one hundred feet west of the brook, and thence, still more widely diverging, continuing almost by a direct line along Mr. Dodge's, south bound to the Hudson River, the outlet being just north of the Misses Copeut's bay, which is a convenient point for descending the bluff and passing under the railroad. Some of the considerations that show this route to be the most dangerous may be briefly stated. While to pass under Mr. Dodge's entrance road would be more direct, it would (a) necessitate a very heavy cutting, (b) it would not receive the road wash from the north, without an expensive reversal of the grade of the gutters, and necessarily of the sidewalks, or laying connecting pipes from the present lowest points of the gutters, which is just where the route above proposed crosses, (c) it would not be so convenient for connection for Mr. Orr, Mr. Cleveland, Mr. Lewis, or for Mr. Dodge's cottage, and (d) it would present considerable difficulty in crossing the valley of the brook through Mr. Dodge's dam.

After adopting the first route, which may be said to be indicated by nature, for the above and other reasons, as far as Mr. Dodge's south line, to continue still along the natural route across the Misses Copeut's land to the middle of the bay near Mr. Hoe's corner, would have many points against it as compared with the course selected. (a) It would greatly increase the length of pipe, (b) it would present the difficulty of shutting out completely the water from brook while excavating and laying, the most feasible route this way hugging the brook closely, (c) it would meet with more boulders and ledge rock, as the ridge which the brook pierces is more exposed here, in fact naked, (d) it would require the crossing of the bay by one of several expensive and unsatisfactory contrivances.

ces, and (c) it would debouch into a more confined space in the river, nearer to the dock and bathing beach, receiving the force of the ebb and flow in a degree materially less than the terminus selected. Mr. Hoe would not have so good an opportunity to connect; but he has a complete system on his own ground just recently constructed for the purpose of diverting his household waste from the bay.

After disposing, by the proposed conduit, of the sewage now running into the ponds and the bay, and of all additional sewage that may need disposal on the entire tract, and also of the road-wash from Broadway, there remains a further improvement that seems advisable, indeed absolutely essential, and that is the lowering of the level of the water in the ponds on Mr. Dodge's and the Misses Copeut's lands. A still better and safer course would be, instead of thus alleviating the evil, to remove it entirely by filling in these ponds with material brought from some gravel heap, thus converting them into beautiful ravines; but before advising the latter as a necessity we would prefer to await the result of the (a) purification of the streams, and (b) the lowering of the surface of the ponds. In Mr. Dodge's the weir should be lowered 18 inches, while in the Misses Copeut's  $2\frac{1}{2}$  to 3 feet would not be too great. A speedy and natural improvement of the perimeters would ensue, and would be greatly assisted by laying on both lands some five or six hundred feet of ordinary 2-inch tile.

As regards the small pond on Mr. Hoe's place, it can have no injurious effect in holding back the natural drainage, being set in a deep hollow, and the water arising from springs under its bed; so that, with a little more access for free air, it would be one of the least objectionable of these always suspicious features of a landscape. The large bay under the hill partly in front of his land and the Misses Copeut's, once forming a part of the river, and subject to the ebb and flow of the tide, has been raised by a dam, with the purpose of obviating what many con-

sider the greater annoyance of bare mud exposed twice a day, with all its putrefying contents. By shutting out from this bay or pond the foul matters now polluting it, by the method above proposed, it would be rendered like the two higher up the stream, endurable. As the evils connected with such bays, unlike the two ponds above, would not be lessened by lowering the level, the only resort, if upon trial a change shall seem advisable, is to fill up the bay entirely with material perhaps obtainable close at hand.

Coming back to the main question, the construction of a sewer, it remains to submit a rough estimate of the probable cost. The exact amount will depend upon many circumstances which it would be as yet premature to determine, but will doubtless be within the figures herewith annexed. We have suggested the well-known double glazed pipe, as it possesses many points in its favor for moderate drains, among them (a) relative cheapness, (b) smoothness of channel, and (c) security, when properly laid and cemented, from leakage into the soil. As it is hoped that joint action will be taken in this matter the items are all carried out into one sum total, it not being within our province to suggest who shall pay for this benefit and who for that.

Sewer Pipe, from east side of aqueduct to Pritchard's connection, 500	
“ feet of 5-in. pipe, @ 20c.....	\$100 00
“ from Pritchard's connection to Cleveland's 2d connection,	
500 feet of 6-in. pipe, @ 25c.....	125 00
“ from Cleveland's 2d connection to point near silt basin west	
side of Broadway, 100 feet 8-in. pipe, @ 40c.....	40 00
“ from west basin to river, 1,450 feet of 15-in. pipe, @ \$1,....	1,450 00
Total for pipe.....	\$1,715 00
Opening, laying, and refilling, including cement and cementing,.....	\$200 00
Salt Basin for road wash.....	30 00
Contingencies, including say 50 or 60 yards Rock Cutting and Engineer's	
Fees and all other possible items.....	300 00
Grand Total.....	\$2,245 00

All of which is respectfully submitted.

WARD CARPENTER & SON,

Tarrytown, N. Y.,

Surveyors.

Aug. 1, 1878.

From the *Sunnyside Courier*, Oct. 3, 1878.

IRVINGTON NEIGHBORS.

Mr. Metcalf, the able first assistant of Col. Geo. E. Waring, Jr., the eminent sanitarian engineer so often alluded to in these columns, has begun the work of a thorough investigation of the sanitary condition of the territory lying between Dobbs' Ferry and Tarrytown.

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From the *Sunnyside Courier*, Oct. 3, 1878.

THE PUBLIC HEALTH.

The agitation of this subject, started by Mr. Cyrus W. Field, in Irvington, three months ago, has culminated into a homogeneous system for the three villages; and we now behold Irvington, Tarrytown, and Dobbs' Ferry, concerting measures, in common, to effect the desired reforms, under the leadership of that irrepressible gentleman, who seems to have brought to bear on this scheme the same energy and talent which have characterized his efforts in more extensive enterprises. He has pushed it with a fervor inseparable from his nature, and with an energy, prompted by a consciousness of right and a philanthropic spirit, which no opposition could withstand.

Those friends of this paper, who at first thought we were giving up too much of our space to this theme, now confess that we correctly apprehended its importance, and that the publicity we have given to the discussions have largely contributed to the success of the undertaking.

The Boards of Trustees of the three villages which were heretofore not acting at all, or were attempting to do so in an irregular way under the village incorporating laws of 1870, have reorganized their Boards of Health under the most comprehensive and efficient laws of 1850, specially designed to protect the public health.

These new Boards possess the most ample and extraor-



dinary powers, both legislative and judicial: and it is a matter of surprise that such benign and penetrating remedies as the Act of 1850 affords have not been invoked before.

These Boards are now meeting in joint session, at short intervals, with the view of co-operating upon an harmonious plan, for the good of the entire neighborhood. Blanks will be printed, orders and regulations will be published, and ever facility afforded for speedy action in a lawful way. Every offender will be given his constitutional right to be heard, and judgments will be entered up and processes issued with the same regularity as in courts of justice.

The new Board in Irvington is organized with Cyrus W. Field, President, Edward C. Gregory, Secretary, Augustus C. Richards, Treasurer, Dr. J. B. Fulton, Health Officer, John A. Bryan, Counsel, and John McGovern Marshal. With such a body, thus officered, it requires very little of the spirit of prophecy to foretell that something quite noticeable, if not startling, is about to be transacted, in the way of eradicating nuisances down there.

The sister villages have not yet announced their new organizations: but we understand that they will be composed of the best men, and of men, too, whose hearts are in the work.

Considerations of a purely domestic nature prevented us from being present at some important meetings last week, one of them quite unique, consisting wholly of ladies, at the residence of Mrs. Howe, sister of Mr. F. W. Guiteau, president of the village of Irvington, at which Mr. Field delivered an address: and it was followed by the adoption of resolutions unanimously and heartily endorsing his efforts. That meeting, we understand, was largely attended; and while our absence was fraught with a happiness to ourselves which a long prior engagement rendered it impossible for us to forego, it is to be regretted

that our readers were thereby deprived of a report of the speeches on that occasion.

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From the *Sunnyside Courier*, Oct. 3, 1878.

#### TARRYTOWN IMPROVEMENTS.

Mr. Robert Hoe has taken prompt measures for the improvement of the bay in front of his lands. The north brook which contains sewage matter, is to be entirely diverted from the bay by a sewer from Mr. Orr's land, through the site of Mr. Dodge's pond, and then west across the Copcut ridge direct to the river, at a point near the bay. This change, together with the re-opening of the culvert, and other improvements, will render this one of the best bays along the river.

The Misses Copcut and Mr. William E. Dodge are also doing much toward the good work by letting out their ponds and filling in the same with clean gravel. The Misses Copcut were among the first to lay the axe to the root of the tree. All will remember what a remarkable improvement was made in the looks and health of their lawn by thinning out the dense foliage that formerly hid their beautiful cottage from the sun and from the eye of the passer-by.

Mr. Frank Vincent, Mr. Robert Hoe, and Mr. Peter S. Hoe, were next to fall into line; and they have made such sweeping and yet judicious changes that they begin to find out that they have land, and room, and air, and sunshine, and fine views. Mr. Peter S. Hoe is having a handsome topographical map made of his place by Ward Carpenter & Son, which firm is also engaged upon several other such maps, including one of the James H. Benedict place, recently purchased by Dr. Barron.

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## MALARIAL DISEASES.

The death of Henry Armit Brown from typhoid fever has called the attention of Philadelphians to the working of the sewerage system of that city. It appears that months ago Dr. Gross, and other eminent physicians, reported the whole system as defective, declaring that owing to the absence of proper traps, the escape of sewage gas into the houses was incessant. It was proposed, we believe, as a first step toward reform, to send a committee to investigate the drainage of European cities, but the city fathers, suspecting an intended holiday at their expense, withheld the supplies. Now that a popular citizen has fallen a victim to the disease, they are bestirring themselves again to look into the cause. Philadelphians, however, like all other Americans, will probably be more energetic in the work of cure than of prevention.

The season is just beginning when malaria of every kind gains ground rapidly. The decomposition of vegetable matter in the fall begets intermittent fevers, and the golden mist of September, beloved of poets and painters, are, in fact, but heavy fogs from the low land, which compress the atmosphere and make it a more solid vehicle to transmit contagion. Typhoid, as all our readers ought to know, is conveyed by animal poison. A single case, unless the closets, drains, etc., are thoroughly disinfected, is enough to poison the whole neighborhood. This fever has prevailed as an epidemic this summer in the city of Bristol, in England. Search was made for the cause, and it has been discovered that a lady of Clifton, while convalescent of typhoid, was ordered to the country; she found board with a dairy farmer near Bristol. The well from which water was taken to clean milk vessels (and, perhaps, to water the milk) was a few feet from the closet drain. Typhoid appeared in nearly every family to which the milk was served. We instance this case to show how subtle are the means of contagion, and yet how easy the prevention. Americans are but just beginning to grasp



this matter of disease in a practical way. In England, when a case of virulent fever occurs, the family, no matter how high their social position, are obliged to submit their premises to a thorough official process of disinfection, the patient is isolated, and the disease checked. In Scotland, when a case of typhoid fever is reported, the house in which it had occurred is closed peremptorily and the owner is not permitted to occupy or rent it until the cause of the disease has been discovered and the disinfection is officially pronounced complete. But who would dare order a free-born American out of his house, even to prevent the poisoning of a whole community?

In default of any official means of prevention, we recommend our readers before returning from the country to look well to the drainage of their houses in town. Spend enough money on traps, waste-pipes, etc., if your floors go bare and you dine on potatoes and milk for the rest of the year. And if a case of typhoid or other fever occurs, have no scruples of false pride or feeling about submitting the patient to a proper isolation and disinfection for the good of others. There was divine as well as human wisdom in the Jewish law which put the unclean person without the camp. It is misfortune enough to be ill, without becoming an instrument of death to others.

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